SERVICE MANUAL

HD25/HD25LV/HD25e

Date	Revise Version	Description
2012.12.17	V1.0	Initial Issue
2013.05.20	V2.0	Add HD25e
2013.07.25	V3.0	HD25/HD25LV Change service mode:power,left,left meun to power,up, right,up,left,menu (P17,P27,P31,P33)

TSE: Mina Check: Amy Approved: Alick

Preface

This manual is applied to HD25/HD25LV/HD25e projection system. The manual gives you a brief description of basic technical information to help in service and maintain the product.

Your customers will appreciate the quick response time when you immediately identify problems that occur with our products. We expect your customers will appreciate the service that you offer them.

This manual is for technicians and people who have an electronic background.Please send the product back to the distributor for repairing and do not attempt to do anything that is complex or is not mentioned in the troubleshooting.

Notice: The information found in this manual is subject to change without prior notice.

Any subsequent changes made to the data herein will be incorporated in future edition.

HD25/HD25LV/HD25e Service Manual

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Manual Version 2.0

HD25/HD25LV/HD25e Comparison List

Parts	HD25	HD25LV	HD25e
Main Board	80.8RV01G002	80.8RU01G002	80.8VC01G001
ROD	70.8EG32GR01	70.8RU25GR01	
Lamp Module	SP.8RU01GC01		SP.8VC01GC01
Engine Module	70.8RV12GR01	70.8RV09GR01	70.8VC19GR01
Color Wheel	70.8RV10GR01	70.8RU24GR01	

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Chapter 1

Introduction

1-1 Highlight

No	Item	Description
1	Dimensions (WxDxH)	● 324x234x97mm(WxDxH) (w/o feet) ● 324x234x112mm (WxDxH) (with feet)
2	Power Supply	● Auto-ranging: 100V ~ 240V ± 10%, 50-60Hz
3	Power Consumption	For HD25/HD25LV ● Bright (Normal): TYP 308W MAX 339W @ 110V AC TYP 297W MAX 327W @ 220V AC ● ECO Mode: TYP 250W MAX 275W @ 110V AC TYP 241W MAX 265W @ 220V AC For HD25e ● Bright (Normal): TYP 240W MAX 264W @ 110V AC TYP 230W MAX 253W @ 220V AC ● ECO Mode: TYP 212W MAX 233W @ 110V AC TYP 204W MAX 224W @ 220V AC
4	Keystone correction	● +/-40 degree is the scaler spec. For HD25/HD25LV ● +/-12 degree is for system angle of V-keystone For HD25e ● +/- 20 degree is for system angle of V-keystone
5	Throw ratio	● 1.5~1.8(D/W) @ 60”
6	Projection lens	● YM40Y
7	Lamp life	For HD25/HD25LV ● Bright Mode (Normal Mode) 3500 Hours Standard @240W,50% Survival Rate ● STD Mode (ECO Mode) 5000 Hours Typical @190W,50% Survival Rate For HD25e ● Bright Mode (Normal Mode) 4500 Hours Standard @190W,50% Survival Rate ● STD Mode (ECO Mode) 6000 Hours Typical @160W,50% Survival Rate
8	Lamp	● 240W Philp E20.9(For HD25/HD25LV) ●190W Philp E20.9(For HD25e)

No	Item	Description
9	DMD Chip&Number of active dots	● 0.65” S600, Dark Chip 3 ● Number of active dots:1920x1080
10	Color wheel	For HD25 ● 6S (R63G61B56R63G61B56)&7200rpm For HD25LV/HD25e ● 6S (R81Y41G84C31W52B71)&7200rpm
11	System controller	● TI DDP4422
12	Video compatibility	● NTSC: M/J ,3.58MHz, 4.43 MHz ● PAL: B, D, G, H, I, M, N, 4.43MHz ● SECAM: B, D, G, K, K1, L, 4.25/4.4 MHz ● HDTV: 720p(50/60Hz), 1080i(50/60Hz),1080P(24/50/60Hz) ● SDTV:480i/p, 576i/p
13	Input signal spec	● VGA-in x2(for HD25e is only VGA-in) ● Composite Video x1 ● HDMI v1.4 ● Audio input (3.5mm jack)x 2 ● RS232 control (9 pin) ● USB type B(remote mouse simulation)
14	Altitude&Temperature	● Non-operation: Sea Level to 40,000 feet Operating: Sea Level to 10,000 feet (@23°C); manual switch to high altitude mode @5000 feet & above ● Operating: 0 to 10,000 feet (5 to 40ºC) Opefating Testing:5°C~40°C @ 0~2,500 feet

1-2 Compatible Mode

Computer Compatibility

Compatibility	Resolution	Refresh Rate [Hz]	Analog	Digital
NTSC	720 x 480	60	-	-
PAL/SECAM	720 x 576	50	-	-
VGA	640 x 480	60	◯	◯
	640 x 480	67	◯	-
	640 x 480	72	◯	-
	640 x 480	85	◯	-
SVGA	800 x 600	56.3	◯	-
	800 x 600	60.3	◯	◯
	800 x 600	72	◯	◯
	800 x 600	85	◯	◯
	800 x 600	120	◯	◯
XGA	1024 x 768	60	◯	◯
	1024 x 768	70.1	◯	◯
	1024 x 768	75	◯	◯
	1024 x 768	85	◯	◯
	1024 x 768	120	◯	◯
HD720	1280 x 720	50	◯	◯
	1280 x 720	60	◯	◯
	1280 x 720	120	◯	◯
WXGA	1280 x 768	60	◯	◯
	1280 x 768	75	◯	◯
	1280 x 768	85	◯	◯
	1280 x 768	60	◯	◯
	1366 x 768	60	◯	◯
WXGA+	1440 X 900	60	◯	-

Compatibility	Resolution	Refresh Rate [Hz]	Analog	Digital
SXGA	1280 x 1024	60	◯	◯
	1280 x 1024	75	◯	◯
	1280 x 1024	85	◯	◯
SXGA+	1400 x 1050	60	◯	◯
UXGA	1600 x1200	60	◯	◯
HDTV	1920 x 1080p	24	◯	◯
	1920 x 1080p	30	-	◯
	1920 x 1080p	50	◯	◯
	1920 x 1080p	60	◯	◯
HDTV	1920 x 1080i	50	-	◯
	1920 x 1080i	60	-	◯
SDTV	720 x 576i	50	-	◯
SDTV	720 x 576p	50	-	◯
SDTV	720 x 480i	60	-	◯
SDTV	720 x 480p	60	-	◯

Note: If the Computer Compatibility supportive signal is different from User's Manual, please refer to User's Manual.

Chapter 2

Disassembly Process

2-1 Equipment Needed & Product Overview

1. Screw Bit (+): 105
2. Screw Bit (+): 107
3. Screw Bit (-): 107
4. Hex Sleeves: 5 mm
5. Tweezers
6. Projector

** Before you start: This process is protective level II. Operators should wear electrostatic chains.*

** Note: - If you need to replace the main board, you have to record the lamp usage hour.*

- Some related contents please refer to common SM chapter 2.

2-1 Repair notice

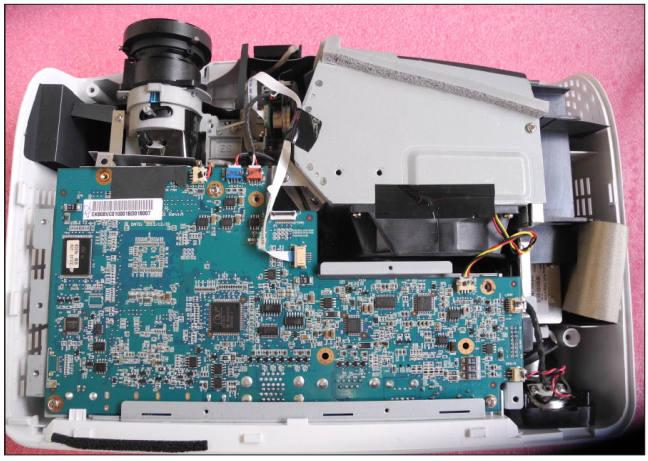
2-1-1 Disassemble Top Cover Module

1. Unscrew 3 screws (as red circle) from the Bottom Cover.

2. Press two sides of the projector and push them as the blue arrow.

3. Remove the Top Cover Module.

2-1-2 Disassemble Main Board



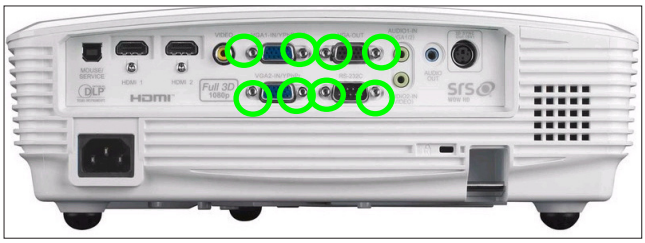
1. Unplug 1 connector (as green square) to remove the FPC cable.

2. Unplug 8 connectors (as yellow square).

FPC cable

3. Unscrew 6 screws (as red circle) from the Main Board Module.

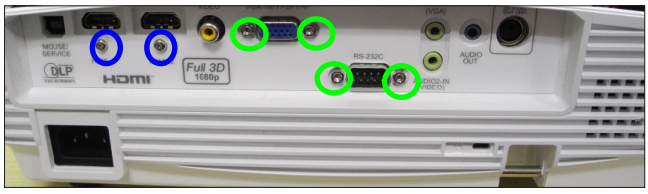
4. Unscrew 2 screw (as blue circle) from the IO Cover.



HD25/HD25LV

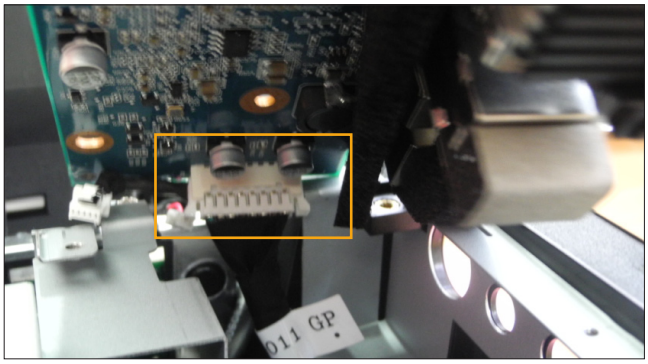
5. Unscrew 8 hex screws (as green circle) from the IO Cover.

note:For HD25e only need to unscrew 4 hex screws (as green circle) from the IO Cover.



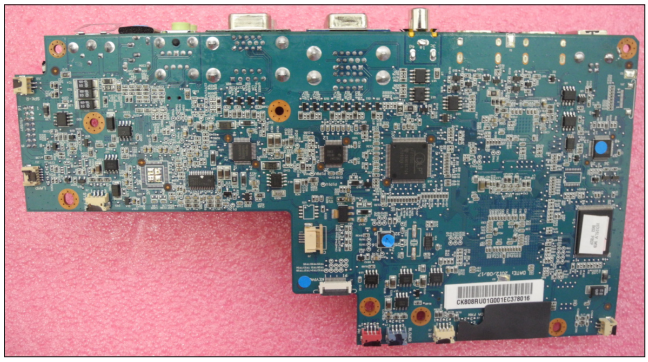
HD25e

6. Unplug 1 connector (as orange square).



7. Disassemble the Main Board.

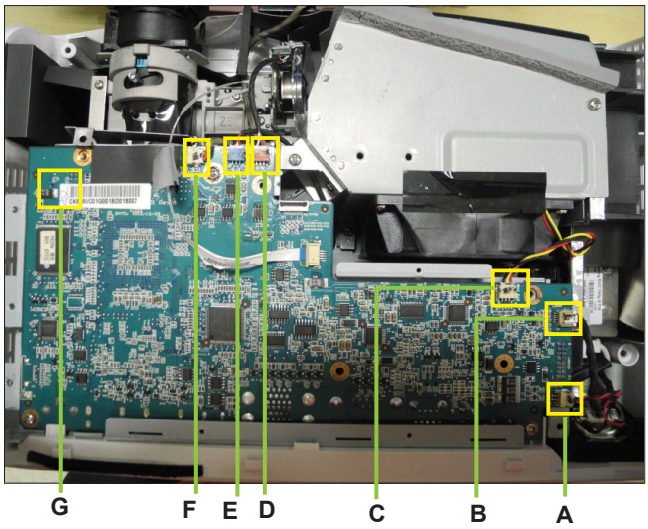
Note: - Make sure cables plug into the correct ports when assembling the unit.

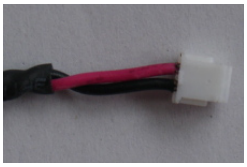
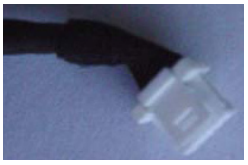
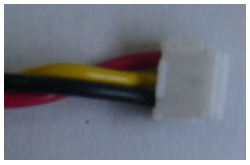
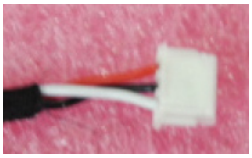


Main Board

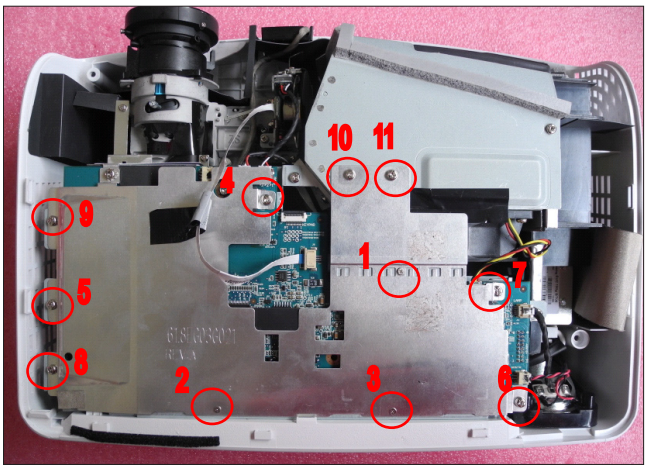
Note: - Make sure cables plug into the correct ports when assembling the unit.

Please refer to the below table details of each connector on Main Board.



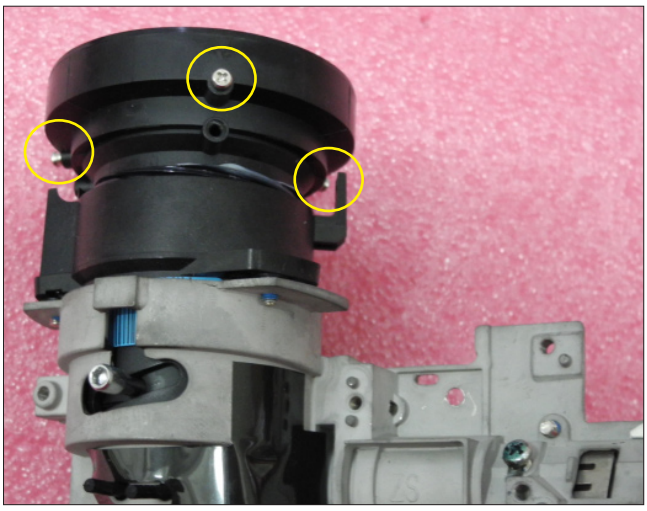
Item	Male Connector on Main Board	The key feature	Figure
A & G	Speaker (position G is not for HD25e)	Compose of Red/Black Wire and Black wire tube (2 pin)	
B	Lamp Driver	Black wire tube (5 pin)	
C	System Fan	Compose of Red/Yellow/Black Wire (3 pin)	
D	Photo Sensor	Compose of Red/Black/White Wire and White wire tube (3 pin)	
E	Blower	Compose of Red/White/Black Wire and White wire tube (3 pin)	
F	IR	Compose of Black/Yellow/Red Wire and Gray wire tube (3 pin)	

Note:Please assemble the main board follow the steps as figure.

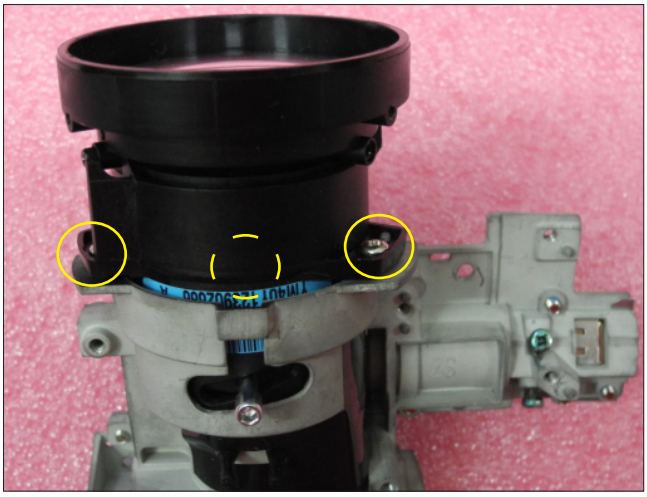


2-1-3 Disassemble Lens

1.Unscrew 3 screws (as yellow circles)



2. Unscrew 3 screws (as yellow circles) to disassemble lens .



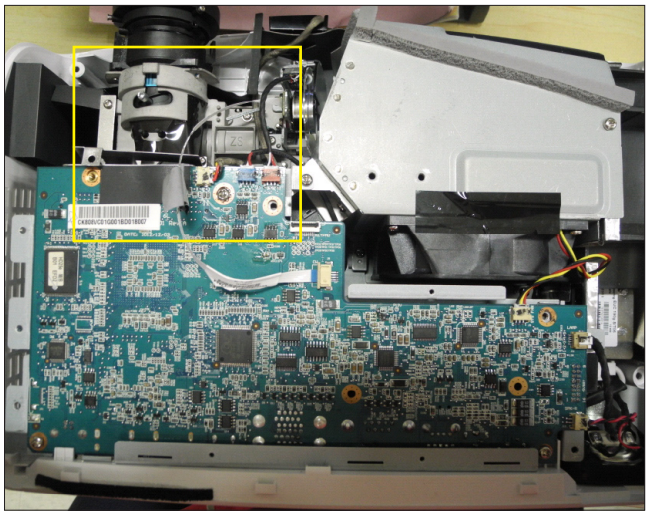
Note:1.Before assemble the new engine,please clean the dusty from engine base by air gun firstly .

2.Locking 3 screws into the lens after assemble the new engine.(as refer to step1)

Lens

Engine Base

2-2 Rod Adjustment



1. Environment Adjustment

   - The distance between the engine and the screen is 1.8M.

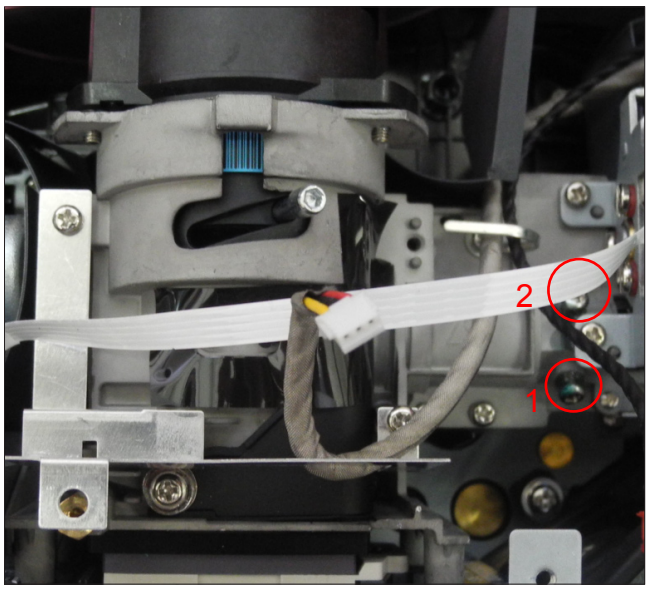
   - This process should be done at a dark environment (under 2 Lux).

2. Procedure Adjustment

   - Change the screen to "white screen".

   - Adjust the screws by using the rod on the engine module to readjust the image.

     ("screw 1" should be adjusted first, and then "screw 2". Adjust until the yellowish or bluish parts disappeared.)



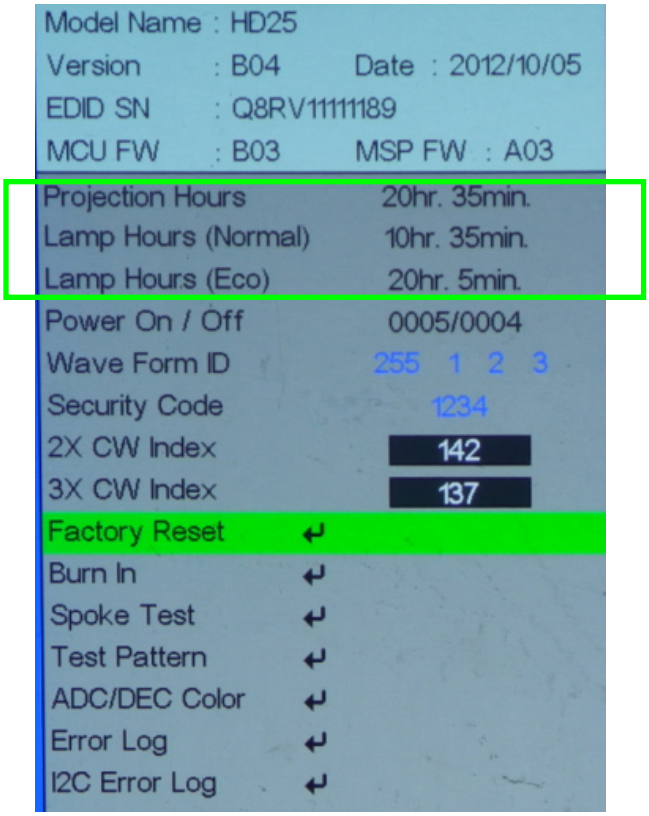
3. Abnormal image inspection

   - It should not have any abnormal color at the rim of the image by estimating through the eyes.

Note: - To avoid over adjusting the rod.

- After the operation, please use the glue to fix the screws.

2-3 Re-write Lamp Hours Usage



1. Get into service mode

   - Press (power→up→right→up→left→ Menu) to get into service mode.

2. Re-write Projection Hours

   -Select Projection Hours and use “left” or “ right” buttons to re-write the projection hours.

3. Re-write Lamp Hours(Normal)

   -Select Lamp Hours(Normal) and use “left” or “right” buttons to re-write the lamp hours(Normal).

4. Re-write Lamp Hours(ECO)

   -Select Lamp Hours(ECO) and use “left” or “right” buttons to re-write the lamp hours(ECO).

5. Choose “Exit”, press “Enter” to exit

Note: left key = decrease lamp hour

right key =increase lamp hour

2-4 Repair Action

Repair action	Change parts						Software		Description page
	Main Board	Lamp Module	Engine Module	Lamp Driver	Blower	Color Wheel	Firmware	EDID	
Firmware Update	v						v	v	Chapter 5
Color Wheel Index	v					v			Chapter 4-4-1.7
OSD Reset	v						v	v	Chapter 4-6.2
EDID	v								Chapter 6
Re-write Lamp Hours Usage	v								Chapter 2-3
Video port test	v								chapter 4-4-3
Auto Waveform and Factory Fan RPM	v			v	v		v	v	Chapter 4-3
Optical Performance Measure			v						Chapter 4-4-8

Chapter 3

Troubleshooting

3-1 LED Lighting Message For Projector

Message	Power LED (Red)	Power LED (Green)	Temp LED (Red)	Lamp Led (Red)
Standby State (input power cord)	*	O	O	O
Power on (Warming)	O	Flashing	O	O
Power on and Lamp lighting	O	*	O	O
Power off (Cooling)	O	Flashing	O	O
Error (Lamp failed)	Flashing	O	O	*
Error (Fan failed)	Flashing	O	Flashing	O
Error (Over Temp.)	Flashing	O	*	O

Note: *Steady light* * *No light* O

3-2 Main Procedure

The other troubleshooting procedures please refer to common service manual 3-1(Main Procedure).

No	Symptom	Procedure
1	Auto Shut Down	- Check LED Status a. Power LED and Lamp LED light on red - Check Lamp - Check Lamp Driver - Check Main Board b.Power LED flashes red, and Temp LED flashes red - Check Fan - Check Main Board - Check Photo Sensor Board - Check whether have execute auto Waveform and Factory Fan RPM c. Power LED flashes red, Temp LED light on red - Check Main Board - Check Color Wheel
2	3D Image Abnormal	- Ensure the using 3D glasses is good and you must face the projection. - Ensure the CD in DVD is 3D format - Ensure your standing distance is less than 6m from screen. - Ensure the 3D function is on and execute “3D sync invert” in OSD menu. - Check main board

3-3 Pin Assignment

Power on the projector and measure the pins as below:

J23:16 PIN POWER From LVPS

PIN	Description	Voltage(V)
1	12V	12
2	12V	12
3	12V	12
4	GND	0
5	GND	0
6	GND	0
7	GND	0
8	GND	0
9	PFC ON1	3.97V
10	GND	0
11	GND	0
12	GND	0
13	5V	5
14	12V	12
15	12V	12
16	12V	12

J23

J9:Blower

PIN	Description	Voltage(V)
1	FAN-V2	8.42
2	FAN-2	0(operation)/3.3(fan lock)
3	GND	0

J4:System FAN

PIN	Description	Voltage(V)
1	FAN-V1	6.18
2	FAN1	0(operation)/3.3(fan lock)
3	GND	0

J3:IR

PIN	Description	Voltage(V)
1	IR-P1	5.08
2	GND	0
3	IR-P2	5.05

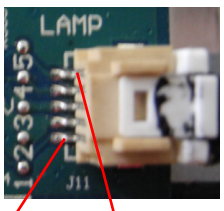
J11:Lamp driver

PIN	Description	Voltage(V)
1	LAMPLIT_IN	4.38
2	GND	0
3	P5V	5
4	LAMPEN_OUT	5
5	D-MODE6	4.8

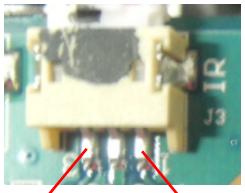
J5:Photo sensor

PIN	Description	Voltage(V)
1	J15-1	1.14
2	PHOTO-IN	0.52
3	GND	0

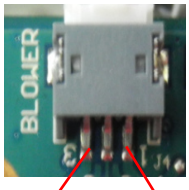
J11



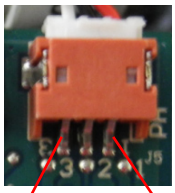
J3



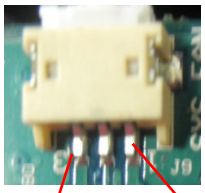
J4



J5



J9



Chapter 4

Test & Inspection

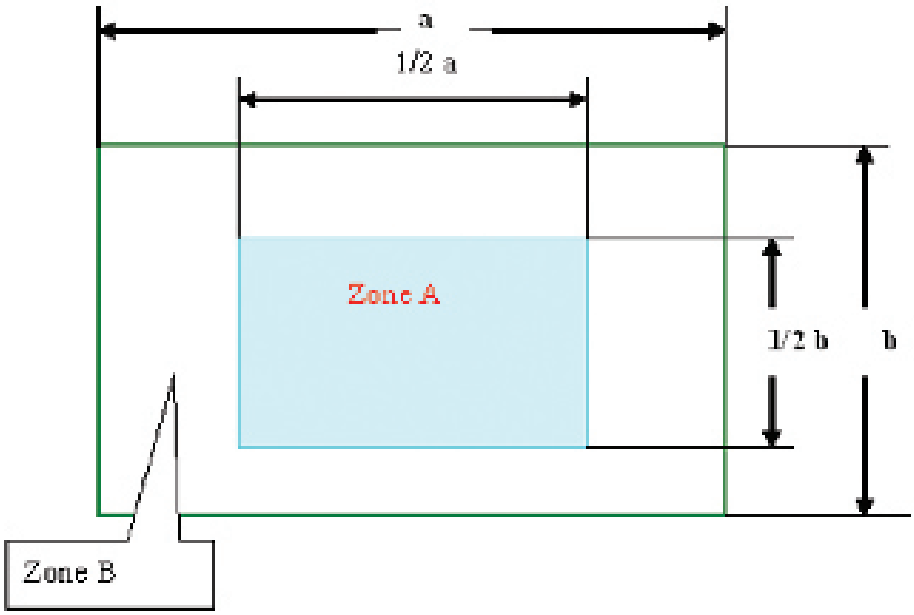
4-1 Test Equipment Needed

- PC with HDTV resolution
- DVD player with Multi-system, equipped “Component”, “Composite”, “S-Video” and “HDMI”.
- HDTV Source (720P,1080P,1080i)
- Minolta CL-100
- Quantum Data 802B or CHROMA2327 (Color Video Signal & Pattern Generator)

4-2 Test Condition

- Circumstance brightness: Dark room less than 2 lux.
- Product must be warmed up for 3 minutes.
- Screen size: 60 inches diagonal.

Zone Definition



< Figure: Zone A, Zone B & Frame (as green line) Definition, Active area=Zone A+ Zone B >

4-3 Auto Waveform and Factory Fan RPM

After replacing main board, blower, lamp driver or upgrading the firmware, please follow steps as below:

1. Plug in power cord,hold “Menu”,”UP” buttons simultaneously and press “POWER” button.Loosen “Menu”,”UP”buttons until“Lamp” and “Temp” LED light red.

2.Wait a moment, please get into service mode then check the “Blower Factory RPM” .

Note:

- *If the Factory FAN RPM Value doesn’t show in service mode, please repeat the step again.*
- *Make sure the “Blower record (rpm) “is 3490-4730.*

4-4 I/O Port Test

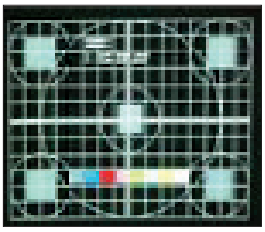
4-4-1 VGA Port Test

Note: the native resolution of test signal is 1920x1080@60HZ.

1. Frequency and tracking boundary

Procedure

- Test equipment: video generator.
- Test signal: analog1920x1080@60Hz
- Test Pattern: general-1 or master
- Check and see if the image sharpness is well performed.
- If not, re-adjust by the following steps:
  (1) Select “Frequency” function to adjust the image appears to flicker vertically.
  (2) Select “Phase” function and use right or left arrow key to image appears to be unstable or flickers.
- Adjust Resync or Frequency/Phase/H. Position/V. Position to the inner screen.



General-1

Inspection item

- Eliminate visual wavy noise by Resync, Frequency or Tracking selection.
- Check if there is noise on the screen.
- Horizontal and vertical position of the video should be adjustable to the screen frame.

Master

Criteria

- If there is noise on the screen, the product is considered as failure product.
- If there is noise on the screen, use auto or manual “frequency” function or “tracking” function to adjust the screen.
- The PC mode functionally sure be workable include support format with frequency and auto detected functional will be workable.

2. Bright Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1920x1080@60Hz - Test Pattern: gray 10
Inspection item	- Bright pixel check.
Criteria	- Bright pixel is unacceptable in the active zone; 1 pixel is allowed on the frame. - Ref. Defect specification table

Gray 10

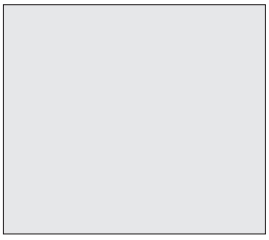
3. Dark Pixel

Procedure	- Test equipment: video generator. - Test signal: analog 1920x1080@60Hz - Test Pattern: full white
Inspection item	- Dead pixels check. - White pattern (IRE=100)
Criteria	- The dead pixel is unacceptable on full white pattern in zone A and no more than 2 dark pixels in zone B - Adjacent pixels are unacceptable. - Please refer to Pixel specification table.

Full white

4. Bright Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1920x1080@60Hz - Test Pattern: gray 10
Inspection item	- Bright blemish check.
Criteria	- The bright blemish is unacceptable under gray 10 pattern in zone A and no more than 4 bright blemish in zone B. - Please refer to Pixel specification table.



Gray 10

5. Dark Blemish

Procedure	- Test equipment: video generator. - Test signal: analog 1920x1080@60Hz - Test Pattern: blue 60
Inspection item	- Dark blemish check

Blue 60

Criteria - The bright blemish is unacceptable under blue 60 pattern in zone A and no more than 4 bright blemish in zone B.

- Please refer to Pixel specification table. .

Pixel specification

Order	Symptom	Pattern	Criteria
1	Bright pixel (dots)	Gray 10 pattern	A+B=0
2	Dark pixel(dots)	White pattern	A=0 B≤2
3	Unstable pixel (dots)	Any pattern	A+B=0
4	Adjacent pixel (dots)	Any pattern	A+B=0
5	Bright blemish (Dirty)	Gray 10 pattern	A=0 B≤4 (diameter<1 inch)
6	Dark Blemish(Dirty)	Blue 60 pattern	A=0 B≤4 (diameter<1 inch)
7	Bright pixel on frame	Gray 10 pattern	=0

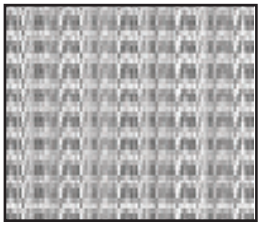
6. Focus Test

Procedure - Test equipment: video generator.

- Test signal: analog 1920x1080@60Hz
- Test Pattern: full screen

Inspection item - Focus check

Criteria - From screen 1.8M via visual to check the focus, look at the entire screen, focus shall be clear, crisp, and sharp over the entire surface of the display pattern. (Blur word on one of the corner after adjustment is acceptable. However, the word should at least be recognizable.)



Full screen

7. Color Performance

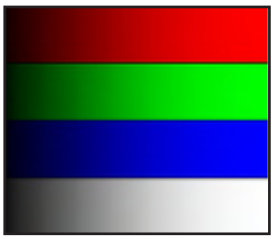
Procedure - Test equipment: video generator.

- Test signal: 1920x1080@60Hz, 1080i
- Test Pattern: 64 gray RGBW

Please get into service mode.Use 720p & 1080p signal, pattern to do color performance. Color cannot discolor to purple and blue.

Inspection item
- Check if each color level is well-functioned.
- Color saturation

Criteria
- Screen appears normal. It should not have any abnormal condition, such as lines appear on the screen and so on.
- Color appears normal.
- It is unacceptable to have few lines flashing.
- RGBW should all appear normal on the screen and sort from R-G-B-W.
- Color levels should be sufficient and normal. (The unidentified color levels on both left and right sides should not over 4 color levels.)
- Gray level should not have abnormal color or heavy lines.
- If color appears abnormal, please get into service mode to do color wheel index adjustment.



64 gray RGBW

8. Optical Performance

Inspection Condition
- Environment luminance: 2 Lux
- Product must be warmed up for 5 minutes
- Distances from the screen: 1.8M
- Screen Size: 60 inches diagonal

a. Measure setting

Procedure
- Please get into OSD menu, select “Lamp Setting” under “Options”, press “Enter” button, then select “Bright “mode.
- Press “Power →Up →Right →Up →Left →Menu” to get into service mode.
- Test equipment:Select “Spoke Test”.

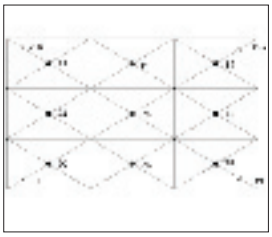
b. Brightness

Procedure
- Full white pattern
- Use CL100 to measure brightness values of P1~P9.
- Follow the brightness formula to calculate brightness values.

☼ Brightness Formula

Avg. (P1~P9)*1.1m^2

Criteria
• 618 ANSI lumen (HD25)
1287 ANSI lumen (HD25LV)
792 ANSI lumen (HD25e)



Full white pattern

c. Full On/Full Off Contrast

Procedure
- Full white pattern & Full black pattern
- Use CL100 to measure brightness values of full white pattern P5 & full black pattern B5 (see image: full white)
- Follow Contrast formula to calculate contrast values.

☼ Contrast Formula

P5/B5

Note: P5 = Lux of center in full white pattern
B5 = Lux of center in full black pattern

Criteria
• 1530:1

Full black pattern

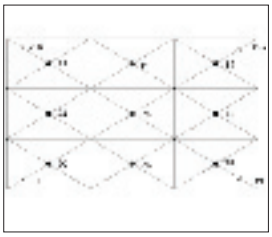
d. Uniformity

Procedure
- Full white pattern
- Use CL100 to measure brightness values of P1~P9 (see image: full white).
- Follow the Uniformity formula to calculate average values.

☼ Uniformity Formula

JBMA Uniformity = Avg. (P1, P3, P7, P9) / P5 *100%

Criteria
• 70%



Full white pattern

4-4-2 Audio Port Test

Procedure	- Test equipment: DVD Player
	- Test signal: CVBS
Inspection item	- Audio performance test
Inspection Distance	- 1.4M ~1.6M
Criteria	- Check the sound from speaker
	- Plug Audio cable into Audio in port, check whether “Volume” is normal.
	- Adjust the volume to “0→ 8” by using the remote controller.
	- Check the sound from speaker.

Motion video

4-4-3 Video Port Test

Procedure	- Test equipment: DVD player
	- Test signal: Video
Inspection item	- Video performance test
Inspection Distance	- 1.4M ~1.6M
Criteria	- Check any abnormal color, line distortion or any noise on the screen.
	- Check the sound from speaker.

4-4-4 Component Port Test

Procedure	- Test equipment: DVD player
	- Test signal: Ycbcr/YPbPr
Inspection item	- HDTV performance test
Inspection Distance	- 1.4M ~1.6M
Criteria	- Check any abnormal color, line distortion or any noise on the screen.

4-4-5 HDMI Port Test

Procedure	- Test equipment: DVD Player with HDMI output.
	- Test signal: 720p, 1080p, 1080i
Inspection item	- HDMI performance test.
Inspection Distance	- 1.4 M ~1.6M.
Criteria	- Ensure the image is well performed and the color can not discolor.
	- Check whether "mute" is normal.

4-5-6 3D Test

Procedure	- Test equipment: 1. Blue-Ray DVD player & 3D format CD
	- Test signal: 1080i@50Hz
Inspection item	- 3D test (HDMI)
Inspection Distance	- 3~5 M
Criteria	- The image should not appear noise, flicker shadow, shocking, abnormal color.

4-5 Run In Test

- Temperature: 15°C~35°C
- Circumstance brightness: Normal environment
- Screen size: No concern
- Display mode: ECO mode

After repairing each unit, a Run-in test is necessary (refer to the below table).

Symptom	Run-in Time
Normal repair	2 hours
NFF	4 hours
Auto shutdown	6 hours

- Get into Burn-In Mode

** Cycle setting is based on the defect symptoms. ie: If it is NFF, the run-in time is 4 hours. You have to set the lamp on for 50 min. and lamp off for 10 min for 4 cycles.*

Press power >up > right > up >left >menu buttons sequentially on remote controller to get into service mode.	
Choose Burn-In Test > enter	
Lamp On	Press right key to adjust the time (50)
Lamp Off	Press right key to adjust the time (10)
Set burn in cycle	Press right key to adjust the cycle
After setting up the time, choose “Get into Burn-In Mode” and press enter	

4-6 Test Inspection Procedure

1. Check Points

Check item	Check point
Firmware version	All firmware version must be the latest version
TB implementation	Related TB must be implement
Cosmetic	Cosmetic can not be broken
Logo	Missing logo, missing prints and blurry prints are unacceptable
Lamp cover	It should be locked in the correct place.
Zoom in/out	The function should work smoothly
Keypad	All keypad buttons must operate smoothly

2. OSD Reset

After final QC step, we have to erase all saved change again and restore the OSD default setting.

The following actions will allow you to erase all end-users' settings and restore the default setting:

(1) Please enter OSD menu.

(2) Choose "Option" and then execute "Reset" function

Chapter 5

Firmware Upgrade

Section 1: System Firmware Upgrade

5-1-1 Equipment Needed

Software: (DDP4422-USB)

- DLP Composer Lite 11.0.2
- Firmware (*.img)
- 11.0.2 FlashDeviceParameters

Hardware:

- Projector
- Power Cord (42.50115G001)
- Cable USB-A to USB-B(42.87304G001)
- PC or Laptop

Note1: we will show the hot key of fw mode and how to check FW version,the other contents please refer to common manual 5-1 .

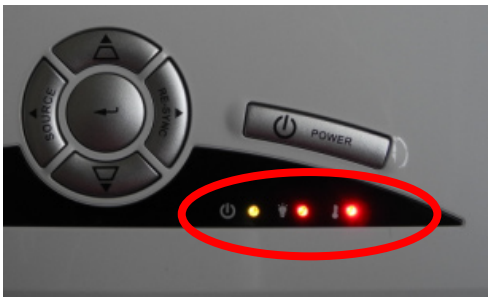
Note2: During FW upgrade procedure,please select "64KB" in "Skip Boot Loader Area".

Note3: Put "11.0.2 FlashDeviceParameters" file into the folder where you setup "DLP Composer Lite 11.0.2"

5-1-2 Get into FW mode

1. Get into Firmware mode

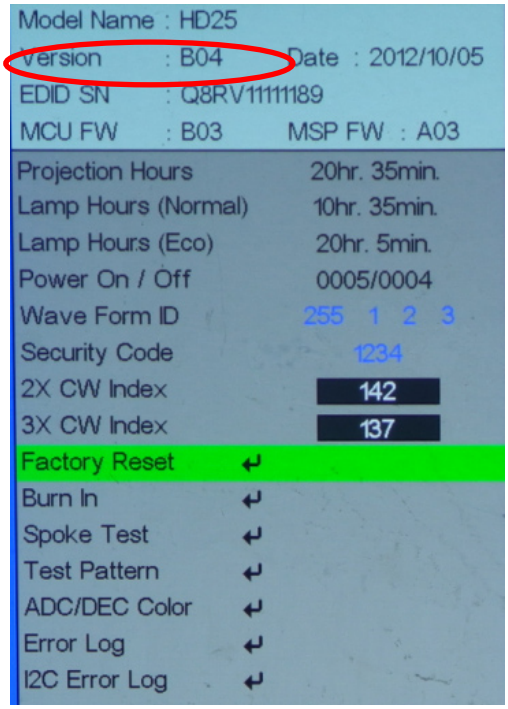
   - Plug in power cord to projector.
   - Hold ”power” button until the “power” LED status goes to steady orange, the Temp LED and Lamp LED will light on red.
   - Loosen the “POWER” button.
   - Connect the projector with PC by USB cable.



5-1-3 Check FW version

1.Restart the unit and enter the Service Mode.
Press Power --> Up --> Right--> Up -->Left--> Menu.

2.The firmware version will be shown as red circle on the screen.



Section 2: MCU FW Upgrade Procedure

5-2-1 Equipment Needed

Software :

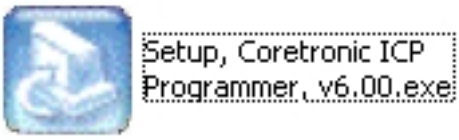
- Coretronic ICP Programmer, v6.00
- USB-to-Serial COM port Driver (PL2303_Prolific_DriverInstaller_v1417.exe)
- Program file (*.TPJ)

Hardware :

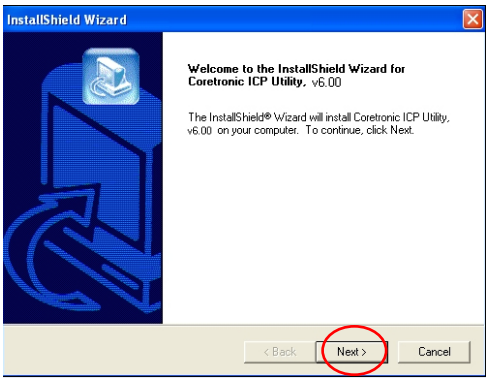
- Projector
- Power Cord (42.50115G001)
- ICP FIXTURE (SP.8JC08G001)
- PC or Laptop

5-2-2 Setup Procedure

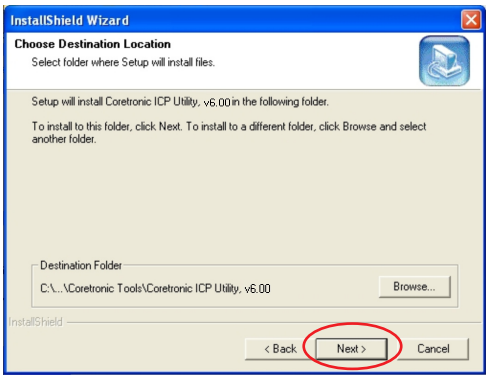
Install ICP Utility



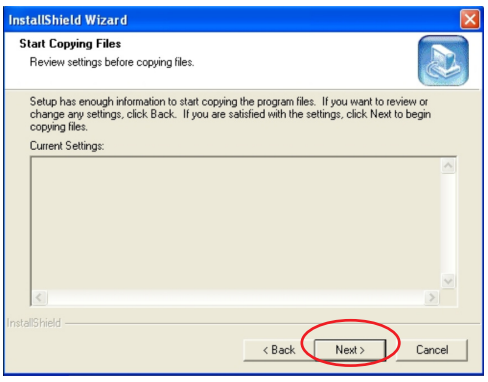
1.Double click "Setup,ICP Utility, v6.00.exe".


InstallShield Wizard
Welcome to the InstallShield Wizard for Coretronic ICP Utility, v6.00
The InstallShield® Wizard will install Coretronic ICP Utility, v6.00 on your computer. To continue, click Next.
< Back
Next >
Cancel

2.Click "Next".

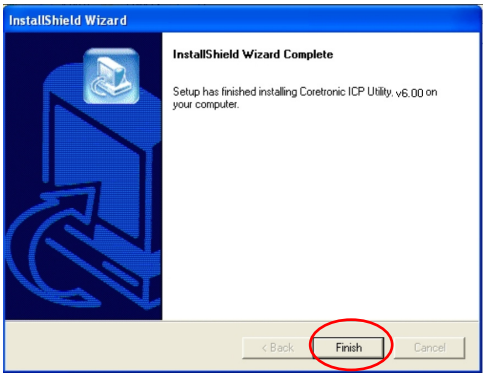

InstallShield Wizard
Choose Destination Location
Select folder where Setup will install files.
Setup will install Coretronic ICP Utility, v6.00 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\...\Coretronic Tools\Coretronic ICP Utility, v6.00
Browse...
InstallShield
< Back
Next >
Cancel

3. Click "Next".


InstallShield Wizard
Start Copying Files
Review settings before copying files.
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
InstallShield
< Back
Next >
Cancel

4. Click "Next".

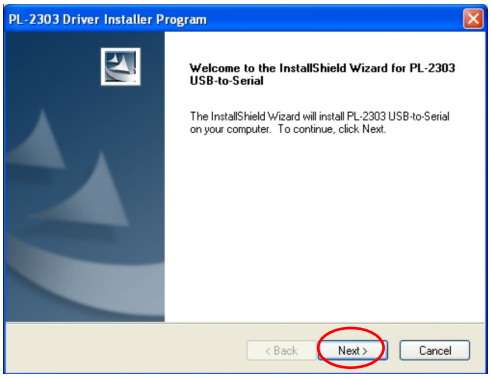
5. Click "Finish" to end ICP Utility installed.



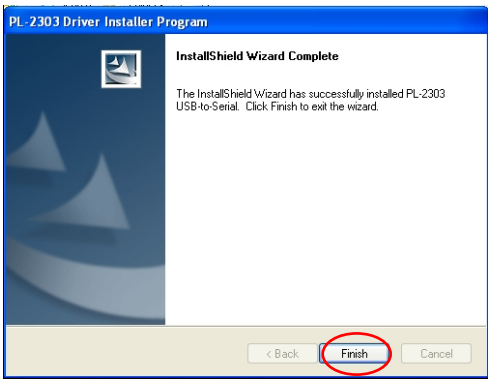
Install PL2303_Prolific_Driver

6. Double Click "PL2303_Prolific_DriverInstaller_v1417.exe"

7. Click "Next".


PL-2303 Driver Installer Program
Welcome to the InstallShield Wizard for PL-2303 USB-to-Serial
The InstallShield Wizard will install PL-2303 USB-to-Serial on your computer. To continue, click Next.
< Back
Next >
Cancel

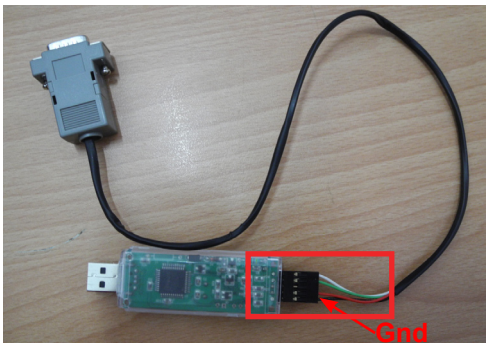
8. Click "Finish" to end PL2303_Prolific_Driver installed.


PL-2303 Driver Installer Program
InstallShield Wizard Complete
The InstallShield Wizard has successfully installed PL-2303 USB-to-Serial. Click Finish to exit the wizard.
< Back
Finish
Cancel

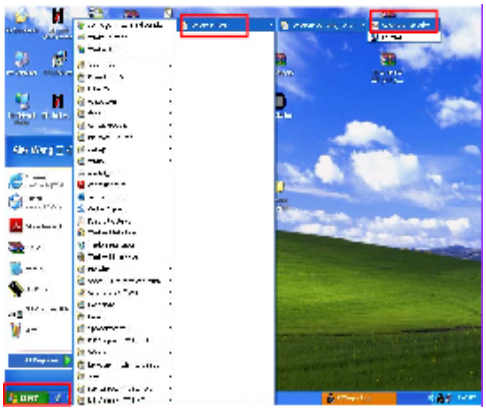
5-2-3 Upgrade Procedure

1.Connect the PC and projector (VGA in) by ICP FIXTURE and plug in the power cord.

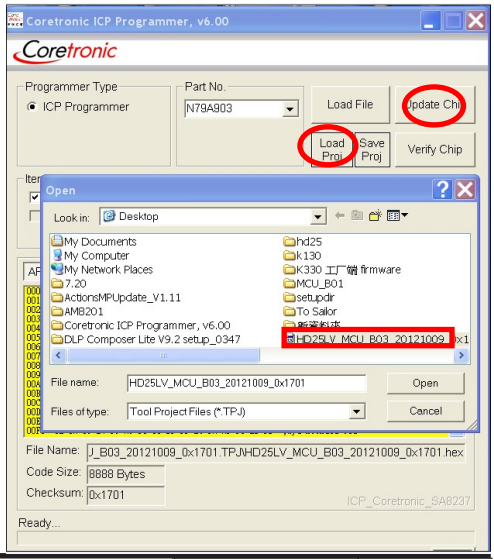
Note:For HD25/HD25LV please insert in the VGA-2 port.
For HD25e please insert in the VGA port.



Note: please properly plug into the fixture board by 4pin cable (as the square shown).



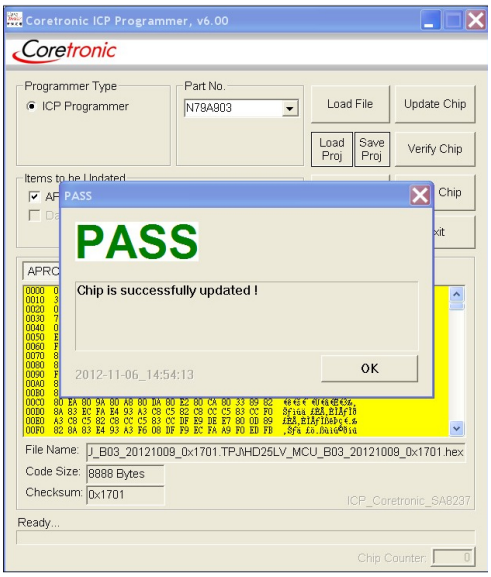
2.Select "Start" -->"Coretronic Tools" -->"Coretronic ICP Utility V6.00" to run "ICP Utility.exe".



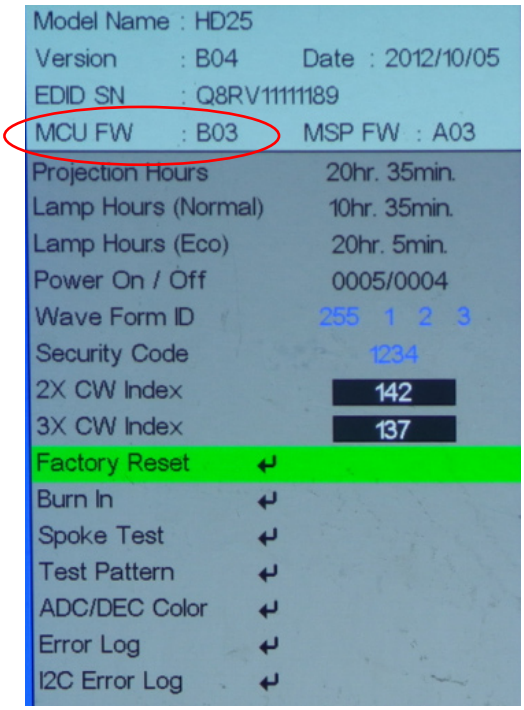
3.Click "Load Proj" to open the “TPJ” file which you will upgrade MCU firmware file,then click " Update Chip" to upgrade the MCU firmware.

5. Finish

- When MCU FW upgrade process is finished, "PASS" will be shown.



6. Re-plug in power cord and power on the projector. Get into the service mode to check the MCU firmware version.



Section 3: MSP FW Upgrade Procedure (For HD25/HD25LV)

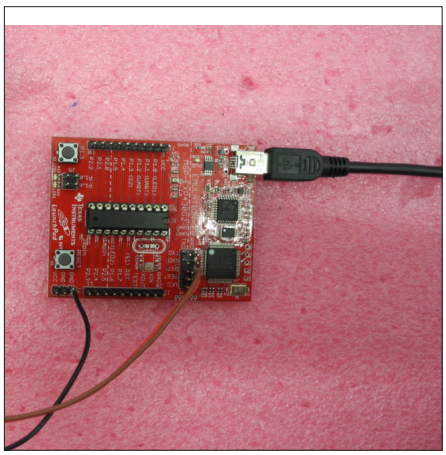
5-3-1 Equipment Needed

Software :

- FET-Pro430-Lite Setup Procedure (Setup.exe)
- Program file (*.d43)

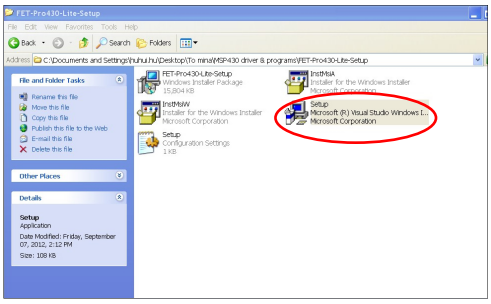
Hardware :

- Projector
- Power Cord (42.50115G001)
- MSP430 FIXTURE (75.8KC16GR01)
- PC or Laptop
- USB Cable mini USB to USB (A) (42.00284G001)



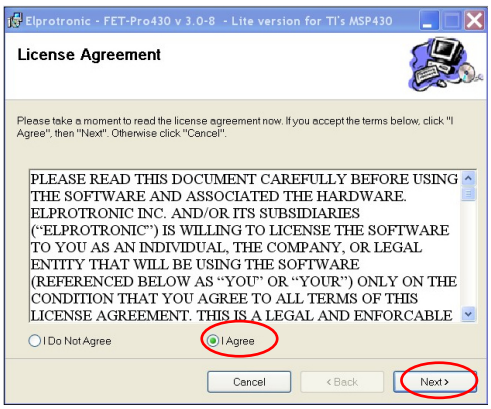
5-3-2 FET-Pro430-Lite Setup Procedure

1. Choose “Setup.exe” Program.

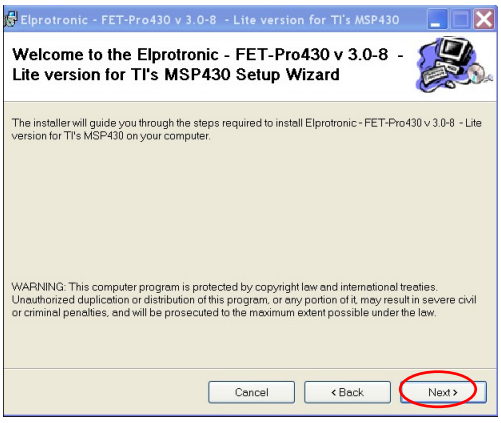


2. Read “License Agreement”.
   - Choose I accept and agree to be bound by all the terms and conditions of this License Agreement”.

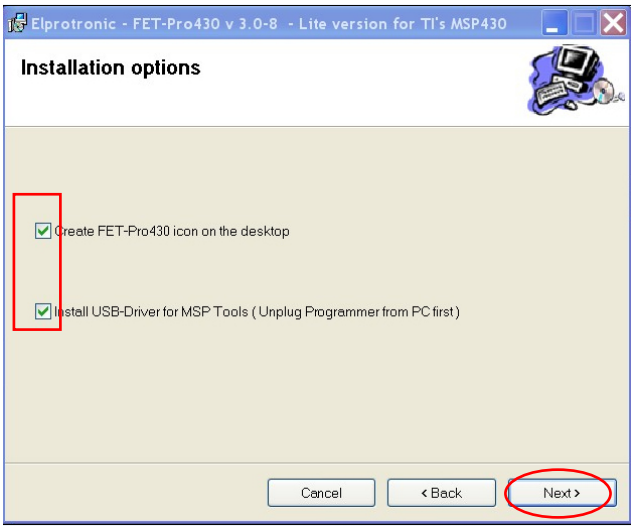
   - Click “Next”.


Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
License Agreement
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".
PLEASE READ THIS DOCUMENT CAREFULLY BEFORE USING THE SOFTWARE AND ASSOCIATED THE HARDWARE. ELPROTRONIC INC. AND/OR ITS SUBSIDIARIES (“ELPROTRONIC”) IS WILLING TO LICENSE THE SOFTWARE TO YOU AS AN INDIVIDUAL, THE COMPANY, OR LEGAL ENTITY THAT WILL BE USING THE SOFTWARE (REFERENCED BELOW AS “YOU” OR “YOUR”) ONLY ON THE CONDITION THAT YOU AGREE TO ALL TERMS OF THIS LICENSE AGREEMENT. THIS IS A LEGAL AND ENFORCABLE
I Do Not Agree
I Agree
Cancel
< Back
Next >

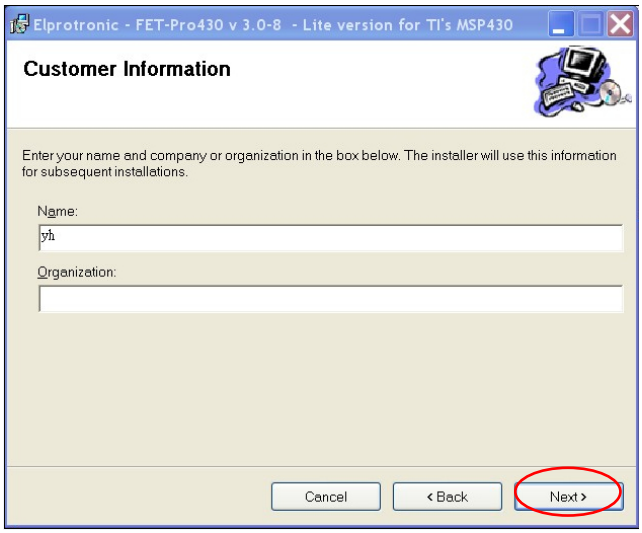
3. Click “Next”.


Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Welcome to the Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 Setup Wizard
The installer will guide you through the steps required to install Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

4. Choose installation options and click “Next”.

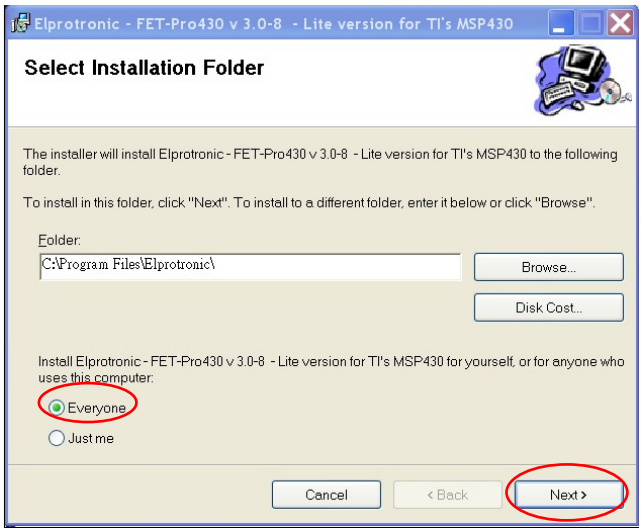

Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Installation options
Create FET-Pro430 icon on the desktop
Install USB-Driver for MSP Tools (Unplug Programmer from PC first)
Cancel
< Back
Next >

5. Click “Next”.

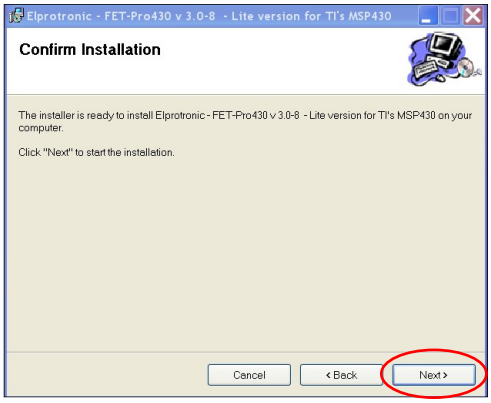

Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Customer Information
Enter your name and company or organization in the box below. The installer will use this information for subsequent installations.
Name:
yh
Organization:
Cancel
< Back
Next >

6. Click the browse button to change the downloading location to “program files”.
   - Select “everyone”

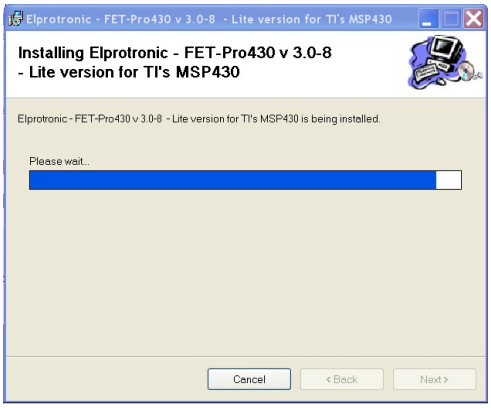
   - Click “Next”.


Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Select Installation Folder
The installer will install Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\Elprotronic\
Browse...
Disk Cost...
Install Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 for yourself, or for anyone who uses this computer:
Everyone
Just me
Cancel
< Back
Next >

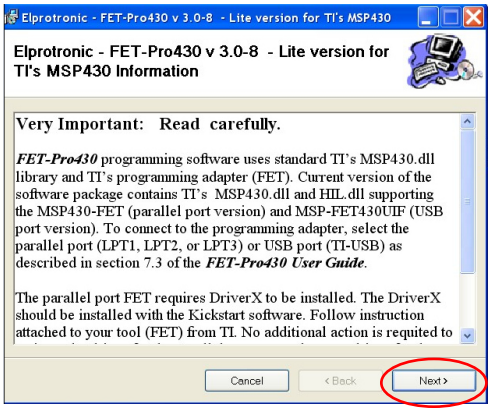
7. Click “Next”.


Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Confirm Installation
The installer is ready to install Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

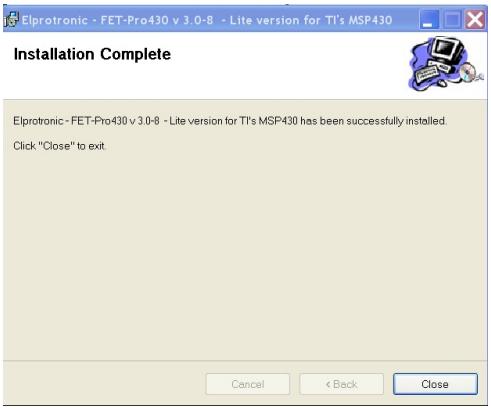
8. The program is being installed.


Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Installing Elprotronic - FET-Pro430 v 3.0-8
- Lite version for TI's MSP430
Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 is being installed.
Please wait...
Cancel
< Back
Next >

9. Click “Next”.


Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 Information
Very Important: Read carefully.
FET-Pro430 programming software uses standard TI's MSP430.dll library and TI's programming adapter (FET). Current version of the software package contains TI's MSP430.dll and HIL.dll supporting the MSP430-FET (parallel port version) and MSP-FET430UIF (USB port version). To connect to the programming adapter, select the parallel port (LPT1, LPT2, or LPT3) or USB port (TI-USB) as described in section 7.3 of the FET-Pro430 User Guide.
The parallel port FET requires DriverX to be installed. The DriverX should be installed with the Kickstart software. Follow instruction attached to your tool (FET) from TI. No additional action is requited to
Cancel
< Back
Next >

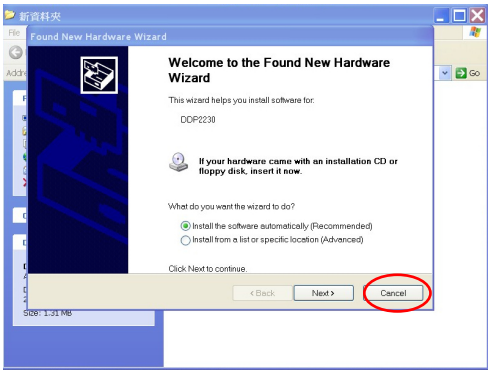
10. Click “Close”.


Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430
Installation Complete
Elprotronic - FET-Pro430 v 3.0-8 - Lite version for TI's MSP430 has been successfully installed.
Click "Close" to exit.
Cancel
< Back
Close

5-3-3 USB Driver Upgrade Procedure

1. Get into Firmware mode
   - Plug in power cord to projector.
   - Hold ”power” button until the “power” LED status goes to steady orange, the Temp LED and Lamp LED will light on red.
   - Loosen the “POWER” button.
   - Plug the VGA port of MSP430 fixture into the VGA-out port of projector and connect the PC with MSP430 fixture by mini-usb cable.

2. The window “Hardware Update Wizard” will show automatically.
   - Select “Install from a list or specific location(Advanced)”
   - Click” Next”


新資料夾
Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
DDP2230
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

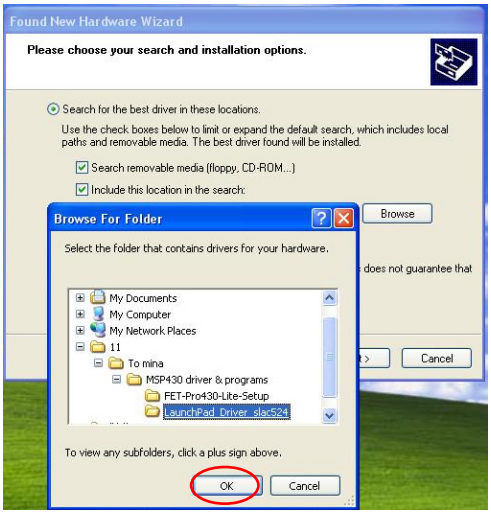
3. Select “Include this location in the search”

- Click the browse button to change the downloading location

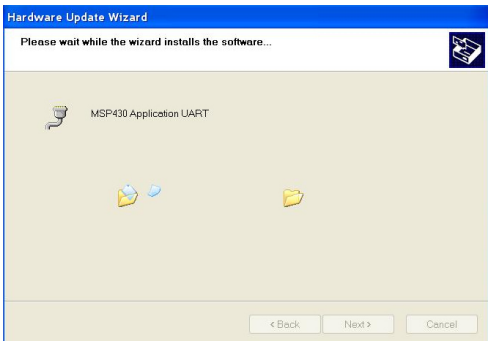
- Select” LaunchPad_Driver_slac524”

- Click”Ok”

- Click”Next”


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
Browse
Browse For Folder
Select the folder that contains drivers for your hardware.
My Documents
My Computer
My Network Places
11
To mina
MSP430 driver & programs
FET-Pro430-Lite-Setup
LaunchPad_Driver_slac524
To view any subfolders, click a plus sign above.
OK
Cancel
does not guarantee that
Cancel

4. Writing system registry values.



5. Click “Finish”.

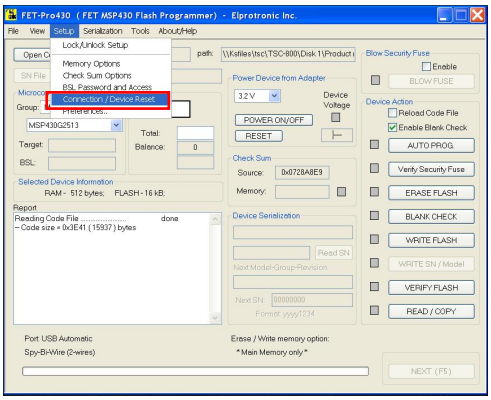
Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
MSP-FET430UIF (TI USB FET) Adapter
Click Finish to close the wizard.
< Back
Finish
Cancel

Note: If the PC appear “Found New Hardware Wis zard” picture again, repeat step 2 to install USB Drivier once more.

5-3-4: MSP FW Upgrade Procedure

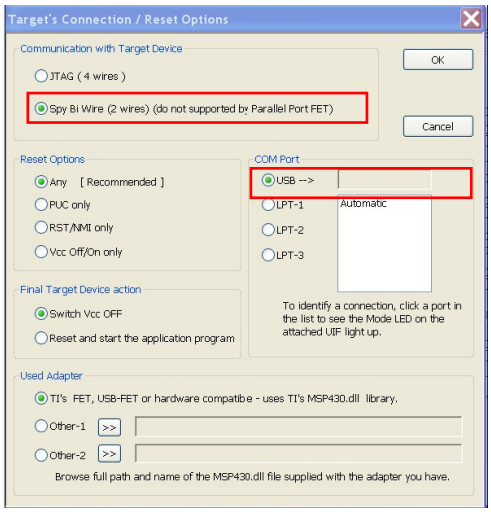
1. Double click “Lite FET-Pro430”.

2. Select “Setup->Connection/Device Reset”, click “Connection/Device Reset”.

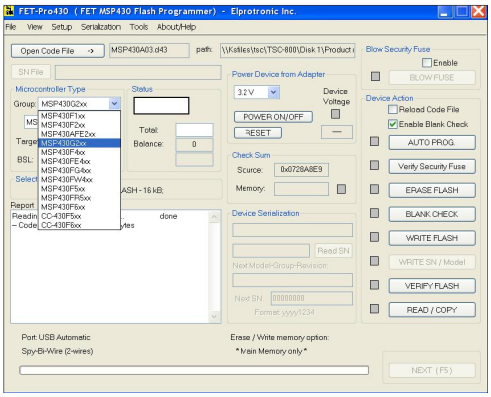


3. Select options as right photo marks.

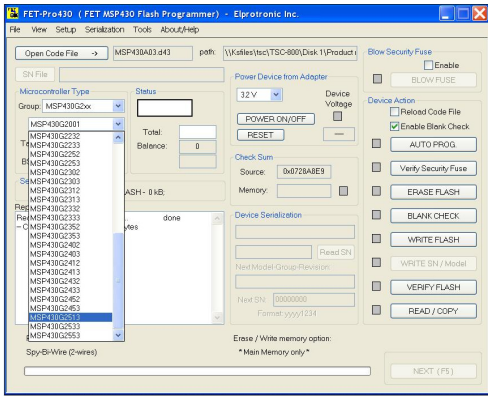
   - Click “ Ok” .


Target's Connection / Reset Options
Communication with Target Device
JTAG (4 wires)
Spy Bi Wire (2 wires) (do not supported by Parallel Port FET)
OK
Cancel
Reset Options
Any [Recommended]
PUC only
RST/NMI only
Vcc Off/On only
COM Port
USB -->
LPT-1
LPT-2
LPT-3
Automatic
Final Target Device action
Switch Vcc OFF
Reset and start the application program
To identify a connection, click a port in the list to see the Mode LED on the attached UIF light up.
Used Adapter
TI's FET, USB-FET or hardware compatibe - uses TI's MSP430.dll library.
Other-1
Other-2
Browse full path and name of the MSP430.dll file supplied with the adapter you have.

4. Select ”MSP430G2xx” .



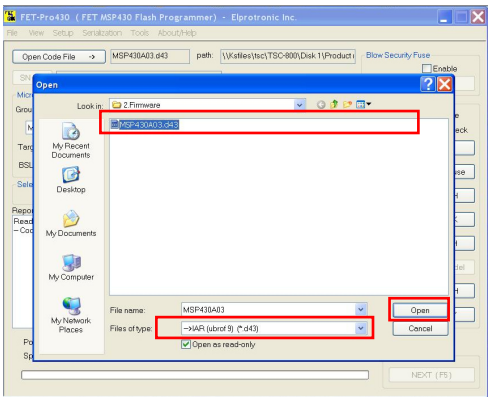
5.Select “MSP430G2513”



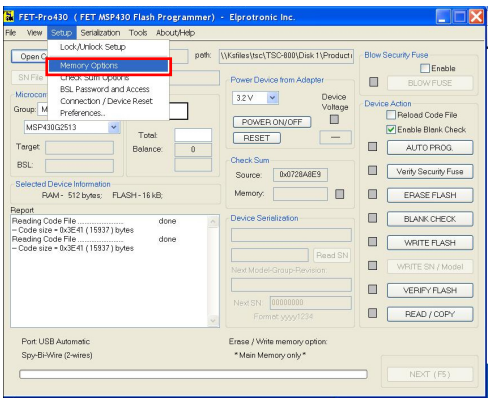
6. Select “Open Cord File”

- Choose “MSP430X.d43 ”(MSP430 firmware)

- Click “Open” .

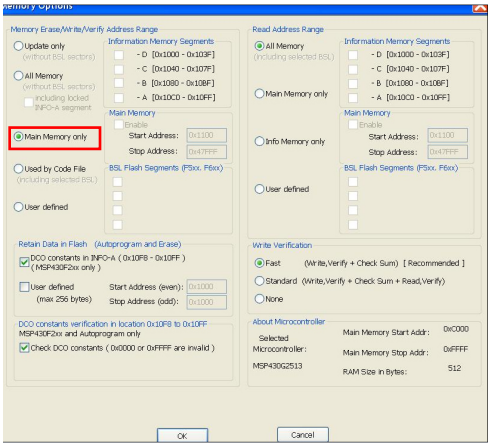


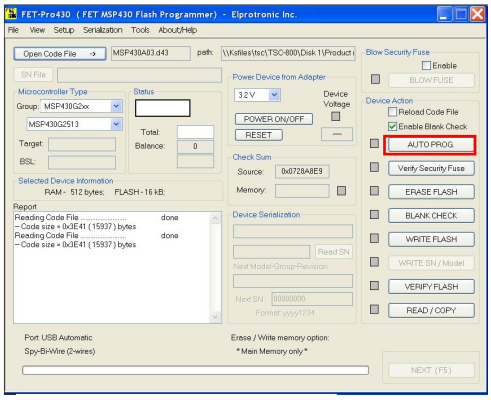
7. Select “Setup->Memory Options”, click “Memory Options”



8. Select options as right photo marks.

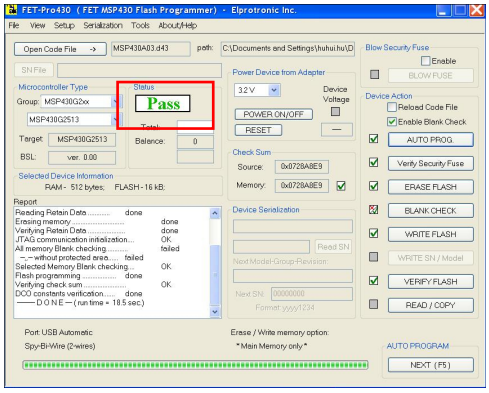
- Click “ Ok” .



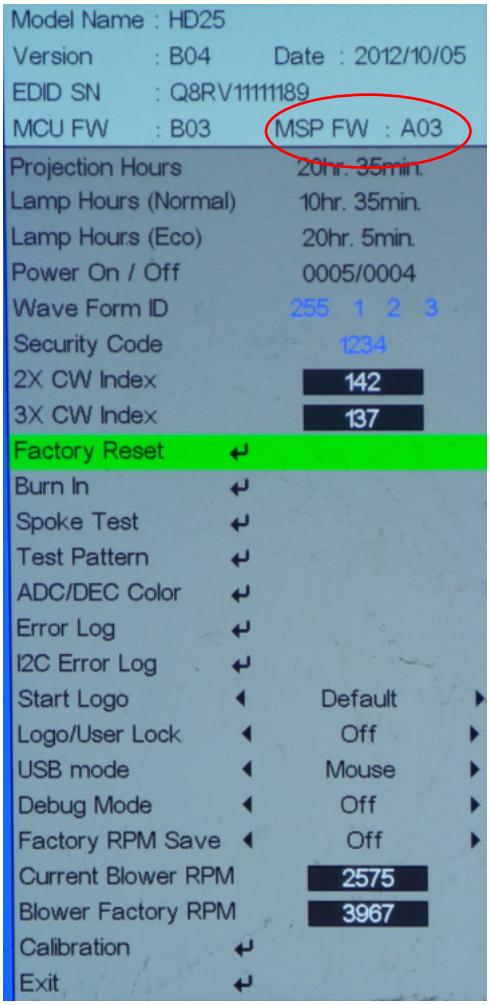


9. Click “Auto Prog”.

- The firmware will start to update .



10. Get into the service mode to check the MSP430 firmware version.



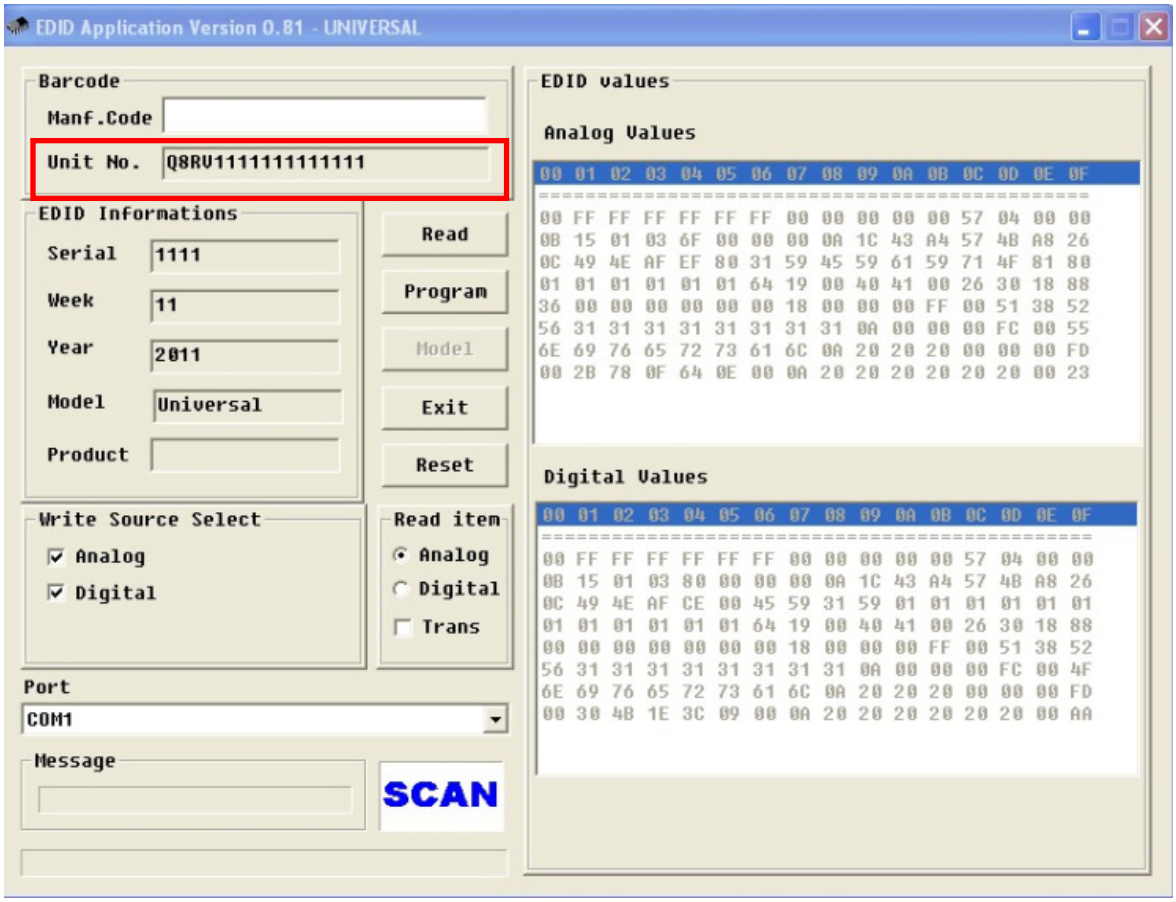
Chapter 6

EDID Upgrade

6-1 EDID Upgrade Procedure

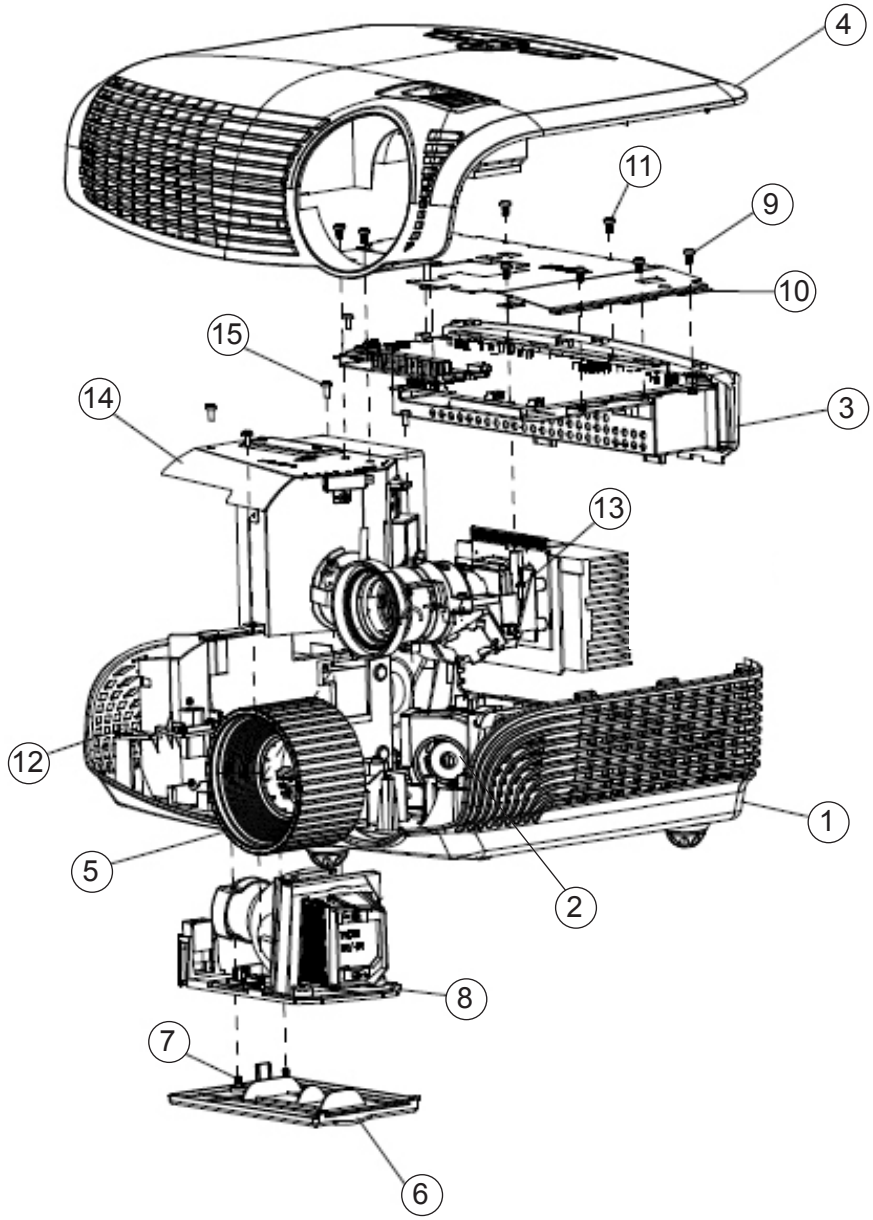
- *The upgrade procedure for VGA and HDMI ports please refer to common service manual chapter 6.*

- *Please use " EDID 0.81.exe" Program and Key in the serial number into the "Unit No" blank space.*



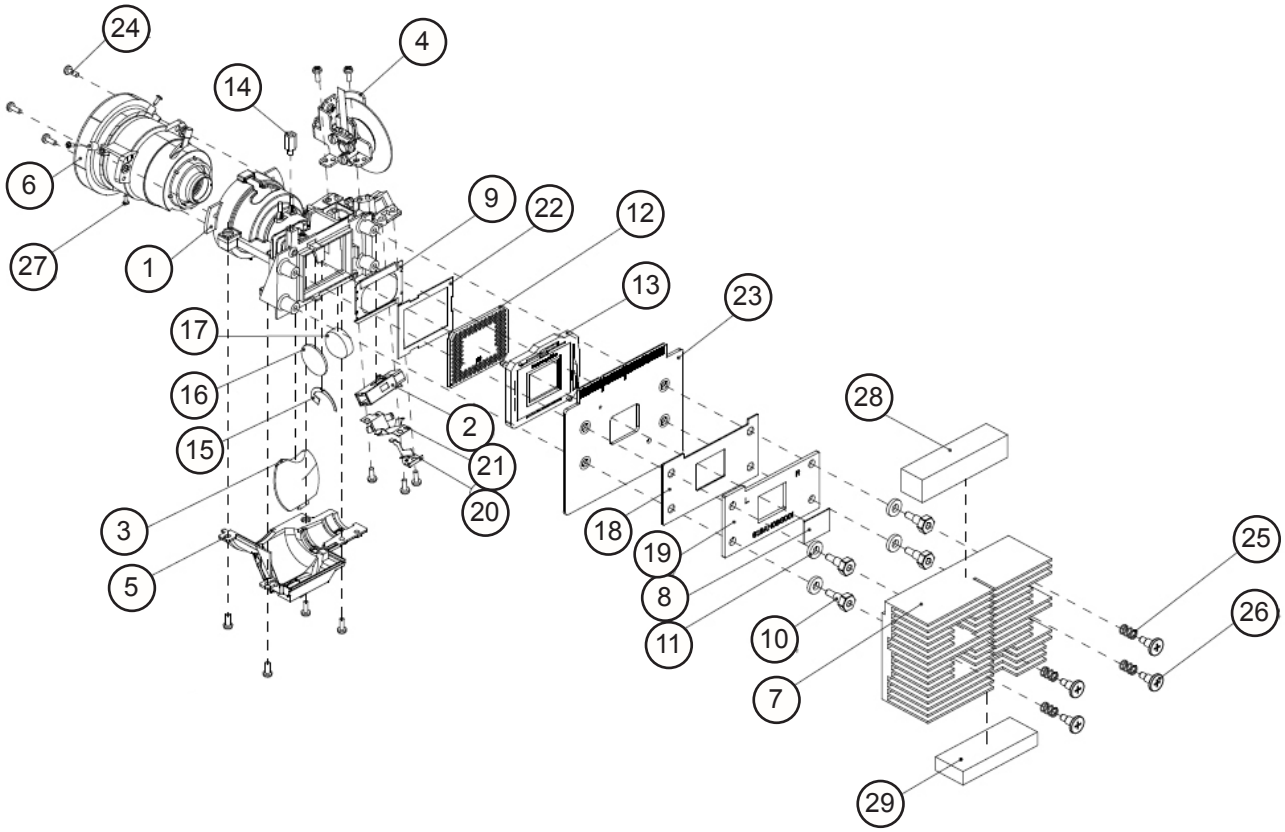
Appendix A

D.C.HD25/HD25LV/HD25e



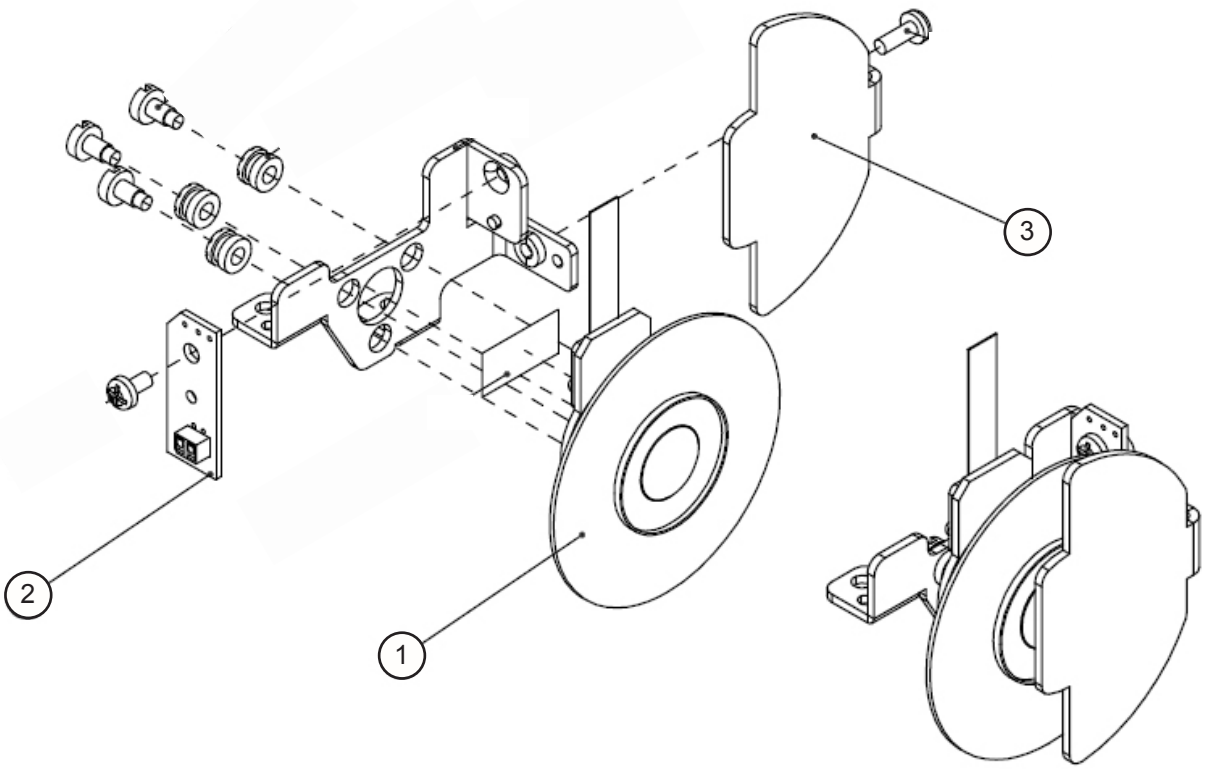
Item	Description	Parts Supply
1	ASSY BOTTOM COVER MODULE HD25LV	
2	SPEAKER 8FB 8W 8-OHM WITHOUT TUBING HD25LV	V
3	ASSY MAIN BOARD MODULE HD25	
4	ASSY TOP COVER AND ZOOM RING MODULE EH1020	
5	FOCUS RING BLACK HD200X (FOR YM40)(LGSM)	
	ASSY LAMP COVER BLACK FOR EX615 (SERVICE)	V
6	LAMP COVER BLACK EX615(LGSM)	
7	LOCK SCREW PAN MECH M3*8.5-3.5 BLACK(1018+HEAT TREATMENT)	
	ASSY PHILIPS E20.9 240W LAMP MODULE HD25LV	V
	LAMP MODULE FOR PROJECTOR HD25e	V
8	ASSY PHILIPS E20.9 240W LAMP MODULE HD25LV	
9	SCREW PAN MECH M3*5 Ni	
10	TOP COVER SHIELDING HD20s	
11	SCREW DOUBLE FLAT MECH M2*3Ni	
12	PAN SCREW M3*8 FOR YM-64 FRONT CELL & SP	
13	SCREW PAN MECH M2.6*6 Ni NYLOK	
14	ASSY 8525 FAN SHIELDING MODULE HD25LV	
15	SCREW PAN MECH M3*6 NI	

Assy Optical Engine Module



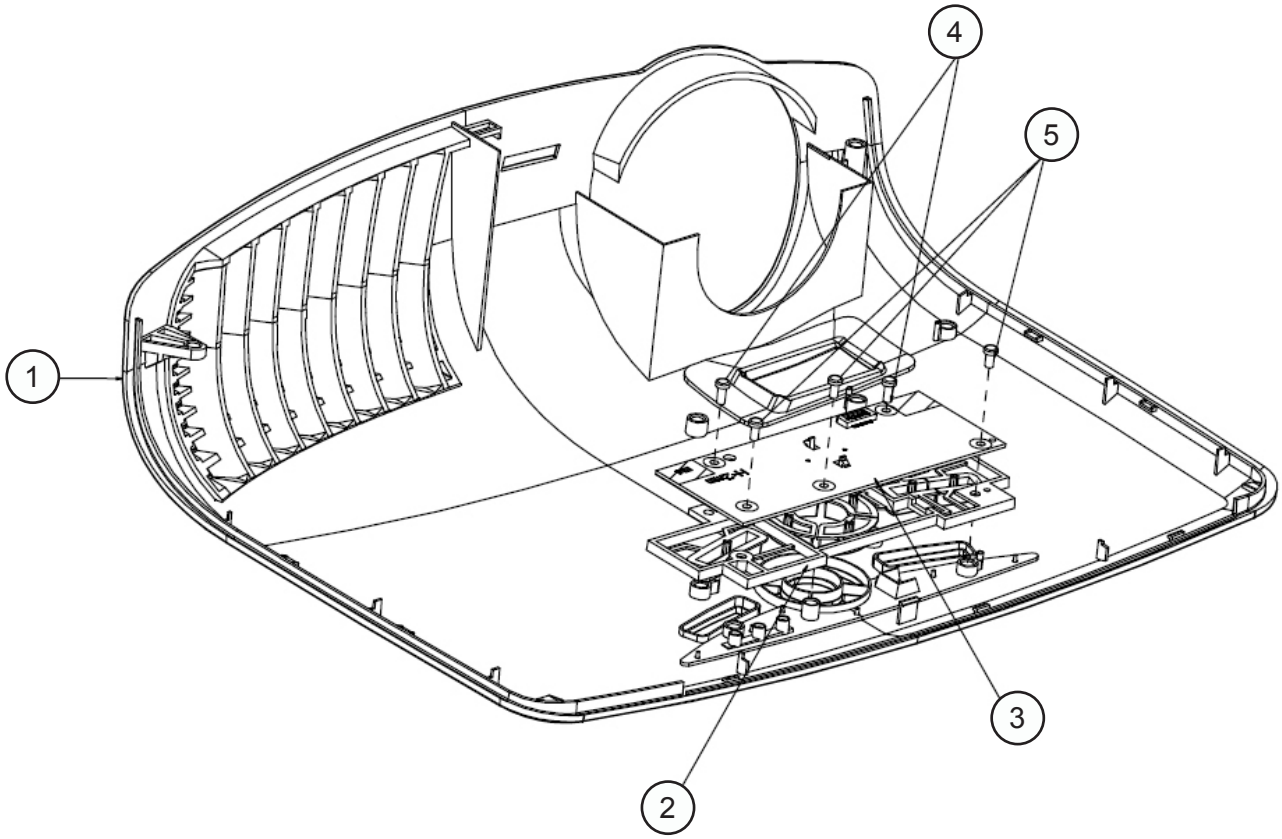
Item	Description	Parts Supply
	ASSY OPTICAL ENGINE MODULE FOR 8RV(SERVICE)	V
	ASSY OPTICAL ENGINE MODULE FOR 8VC(SERVICE)	V
1	ASSY ENGINE BASE MODULE H15 ADD BOSS HD25LV	
	ASSY ROD MODULE FOR HD20 (SERVICE)	V
	ASSY ROD MODULE FOR 8RU(SERVICE)	V
2	ASSY ROD MODULE HD20	
3	ASSY RELAY MODULE EW762	
	ASSY COLOR WHEEL MODULE FOR 8RV (SERVICE)	V
	ASSY COLOR WHEEL MODULE FOR 8PJ (SERVICE)	V
4	ASSY COLOR WHEEL MODULE HD25	
5	ASSY ENGINE BOTTOM HD20	
6	Projection Lens TR1.5 - 1.8 (YM40Y)	
7	DMD HEATSINK AL6063 H15	
8	S450 0.55” XGA/SVGA DMD thermal pad, FUJIPOLY, Sarcon XR-HE, 18.4x12.5x0.5 mm	
9	SPRING FOR DMD STEP SCREW X1161	
10	STEP SCREW FOR DMD M2.6*16.2mm X1161	
11	SPRING FOR DMD STEP SCREW X116	
12	DMD 1920*1080 PIXEL 0.65” 1080P 2xLVDS DC3 S600 1910-6037E	V
13	CNNT F 350P 0.55” 1080P S600 BGA DMD ZIF SOCKET EPZ350;FOXCONN	
14	HEX SCREW M2.6*H8*L4,BRASS	
15	CONDENSER LIGHT STOP SUS304 0.3t 1609WX	
16	KINKO CONDENSER 1 FOR A15W	
17	KINKO CONDENSER 2 FOR A15W	
18	DMD INSULATION PC A15	
19	DMD PLATE AL A6061 M409WX	
20	ROD COVER WXGA HYBRID K750	
21	ROD SPRING SUS301 HD20	
22	DMD ANTIDUST RUBBER 739 SILICONE RUBBER	
23	PCBA DMD BOARD FOR HD21 PROJECTOR	V
24	SCREW PAN MECH M2.6*6 Ni NYLOK	
25	DMD HEATSINK SPRING SUS304 M409WX	
26	DMD SHOULDER SCREW SB21	
27	SCREW PAN TAP M1.7*4 BLACK	
28	GASKET W*10 H*10 L*40	
29	EMI GASKET W13*H6*L35	

Assy Color Wheel Module



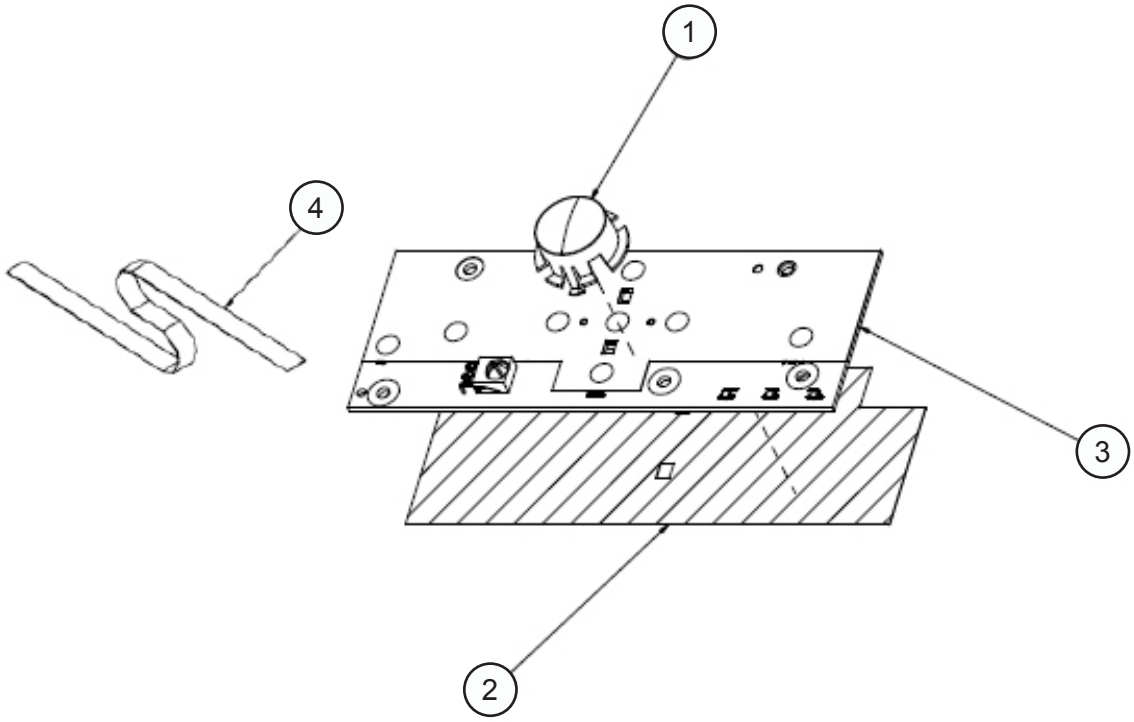
Item	Description	Parts Supply
1	EIS CW 6S Φ42 R59G63B58R59G63B58 URD20VA6 9.4MM	
2	PCBA PHOTO SENSOR BOARD FOR EW762 PROJEC-TOR	V
3	D42 CW HOLDER COVER HD20	

Top Cover Assembly



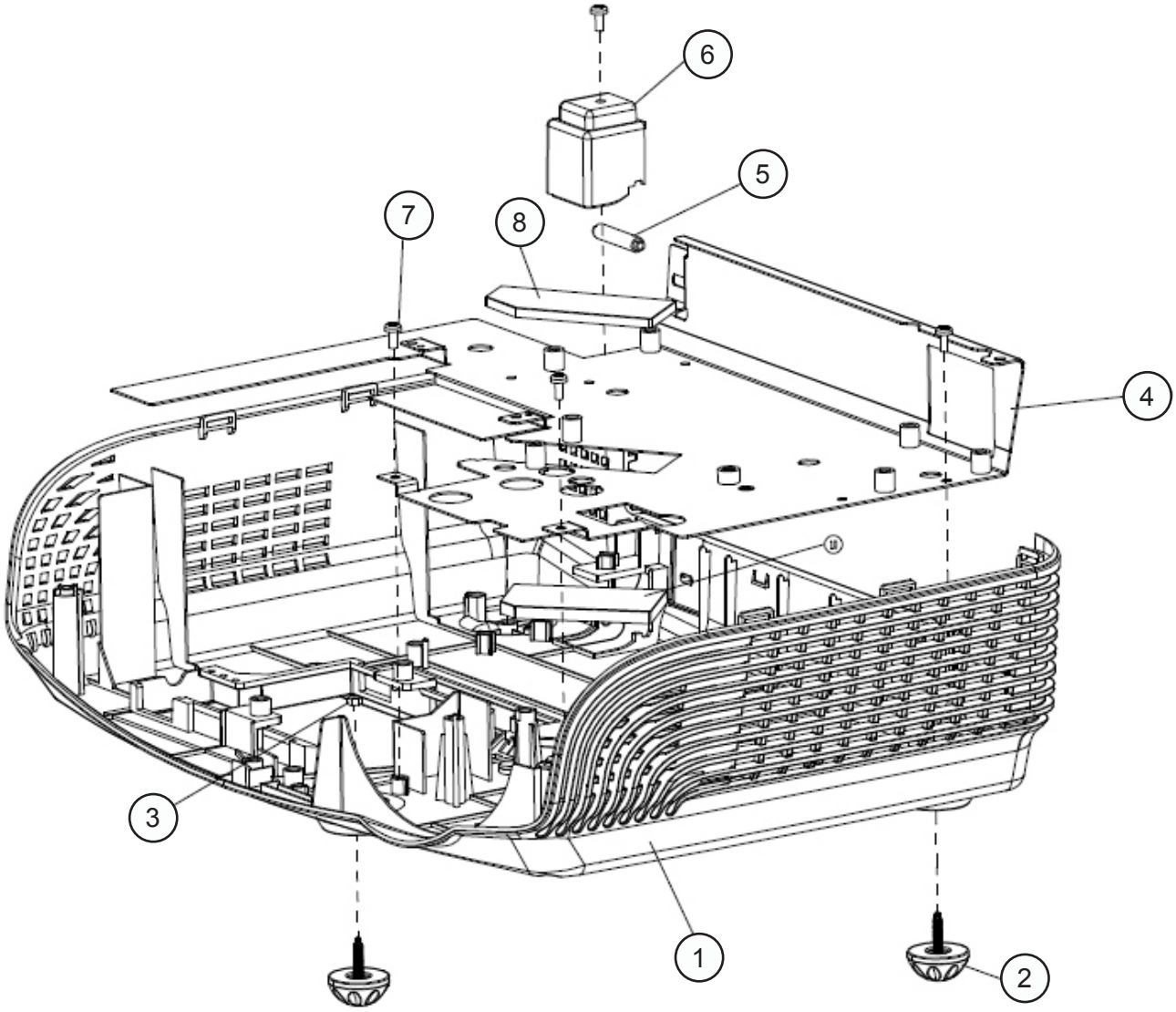
Item	Description	Parts Supply
1	TOP COVER ASSEMBLY HD25 WHITE(LGSM)	V
2	KEYPAD PLATE ENTER HD20(LGSM)	
3	KEYPAD PLATE HD25LV (LGSM)	

Keypad Assembly



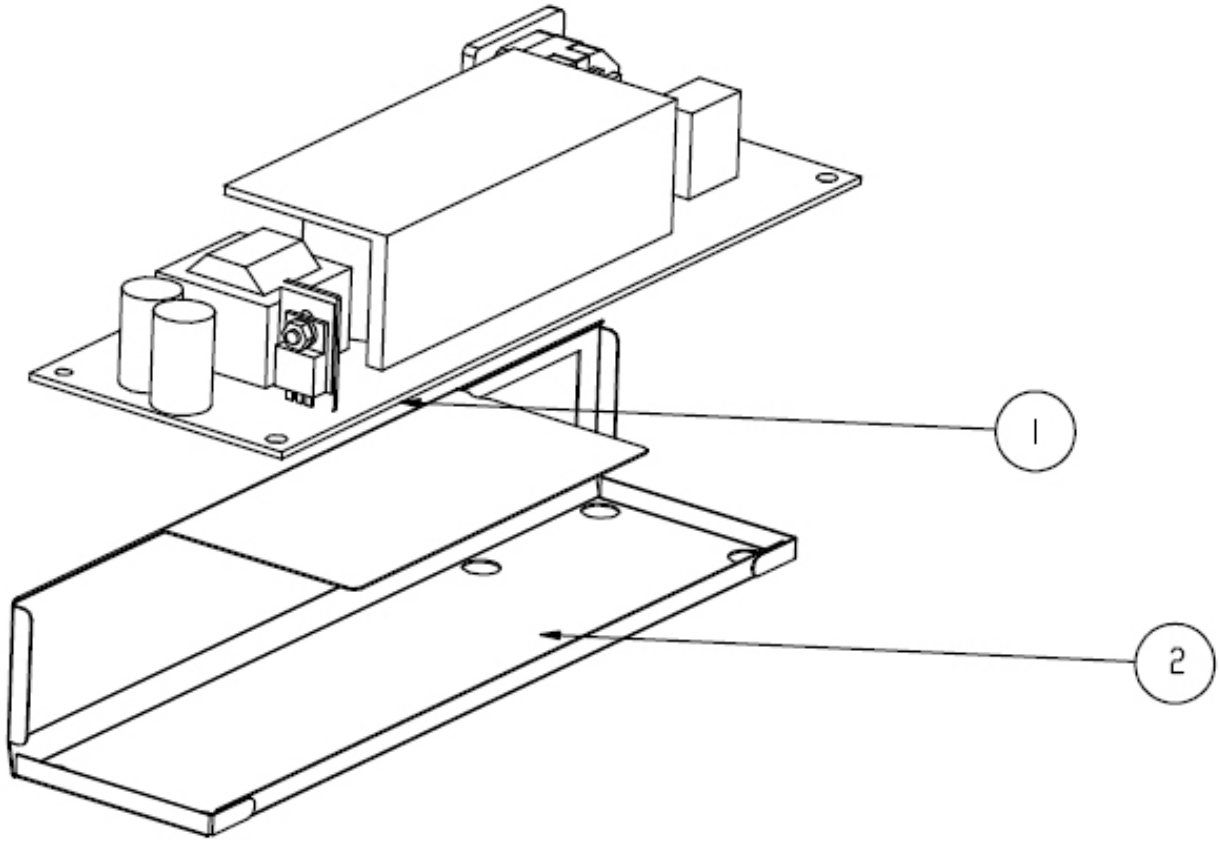
Item	Description	Parts Supply
1	KEYPAD PLATE ENTER EX612(LGSM)	
2	KEYPAD 3M TAPE HD20	
3	PCBA KEYPAD BD FOR SC 1080P	V
4	FFC KEYPAD TO FORMATTER BD 16P P=0.5 122mm 1209S 成朋	

Assy Bottom Cover Module



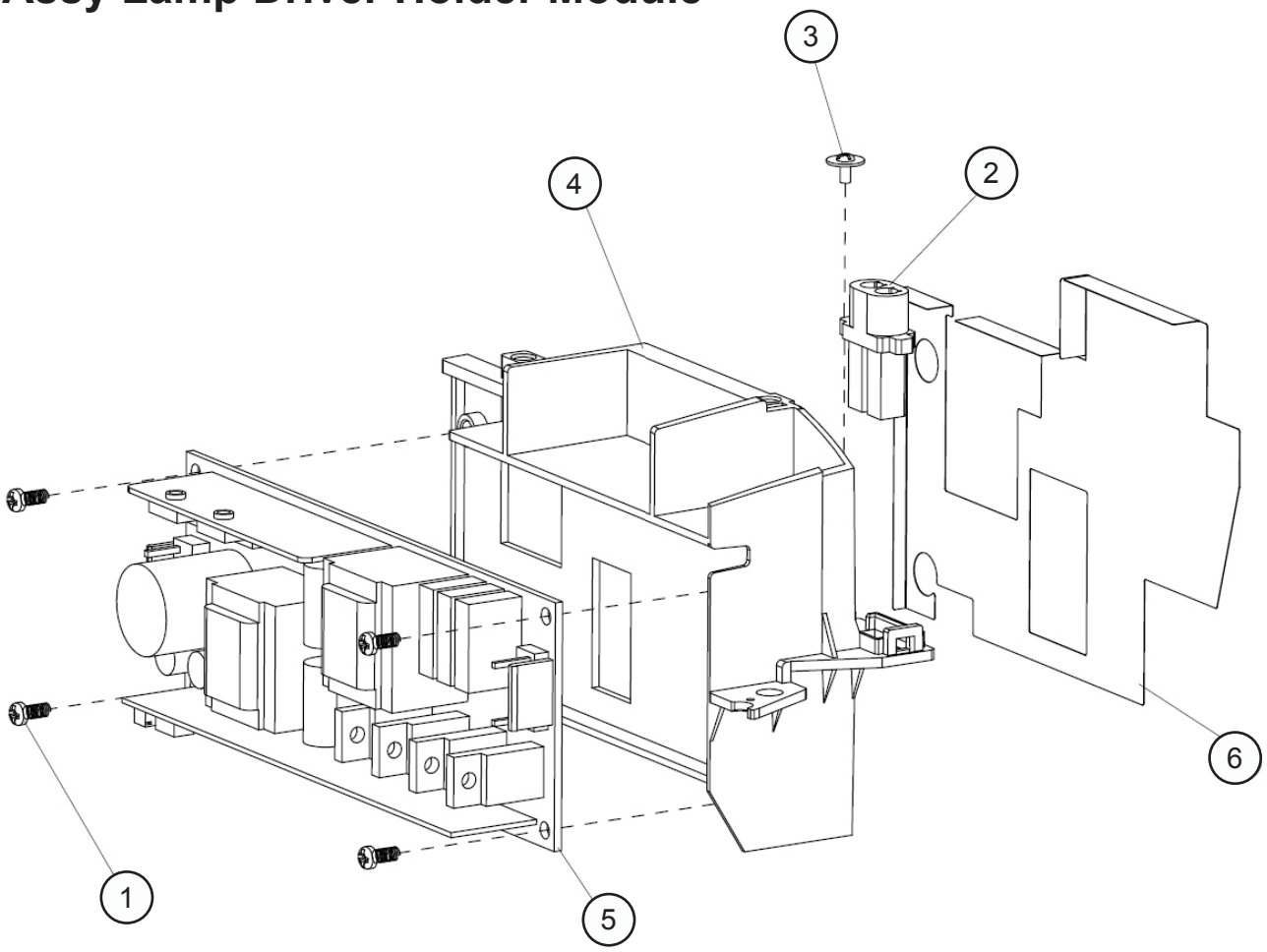
Item	Description	Parts Supply
1	8HW BOTTOM COVER WHITE LN2520 LGSM	V
2	ADJUST FOOT P1266	
3	YH-NUT-M2.0*2.0*4.0	
4	8EG BOTTOM SHIELDING T=0.6MM	
5	SECURITY BAR EX525ST	
6	SECURITY BAR CAP PC LN2520 WHITE HD20	
7	SCREW PAN TAP M3*5 Ni	
8	EMI GASKET W5*H1.0*L155mm PD527	

Assy LVPS Module



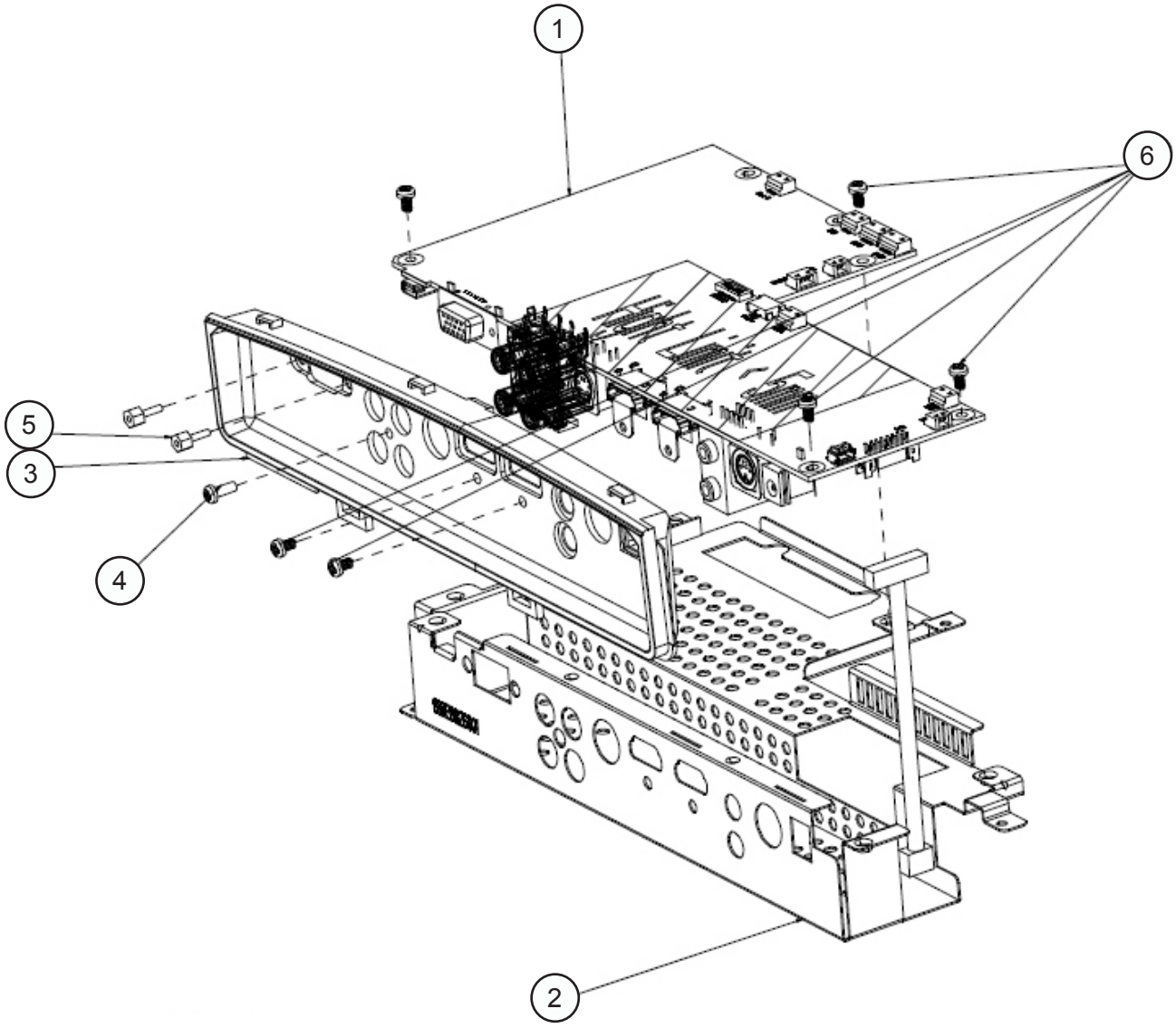
Item	Description	Parts Supply
1	POWER SUPPLY,AD-320W,INLET,200*50,DL,T-SW	V
2	230W LVPS MYLAR PC T=0.43 HD20	

Assy Lamp Driver Holder Module



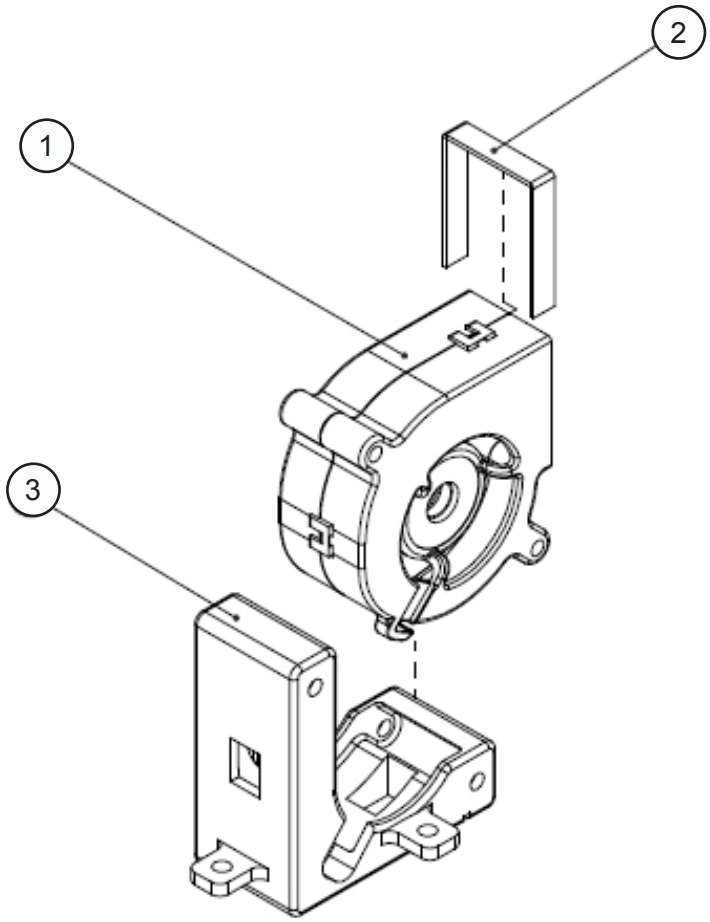
item	Description	Parts Supply
1	SCREW PAN MECH M3*5 Ni	
2	W.A. 2P #22 FEMALE 6KV 150C 95mm FOR LAMP DRIVER PDG-DSU30	
3	SCREW CAP MECH M2*4 Ni	
4	LAMP DRIVER HOLDER PPS+40%GF HD20	
5	LAMP DRIVER PHILIPS EUC 240d N/T05, 135*50, DL, ImageCare	V

Assy Main Board Module



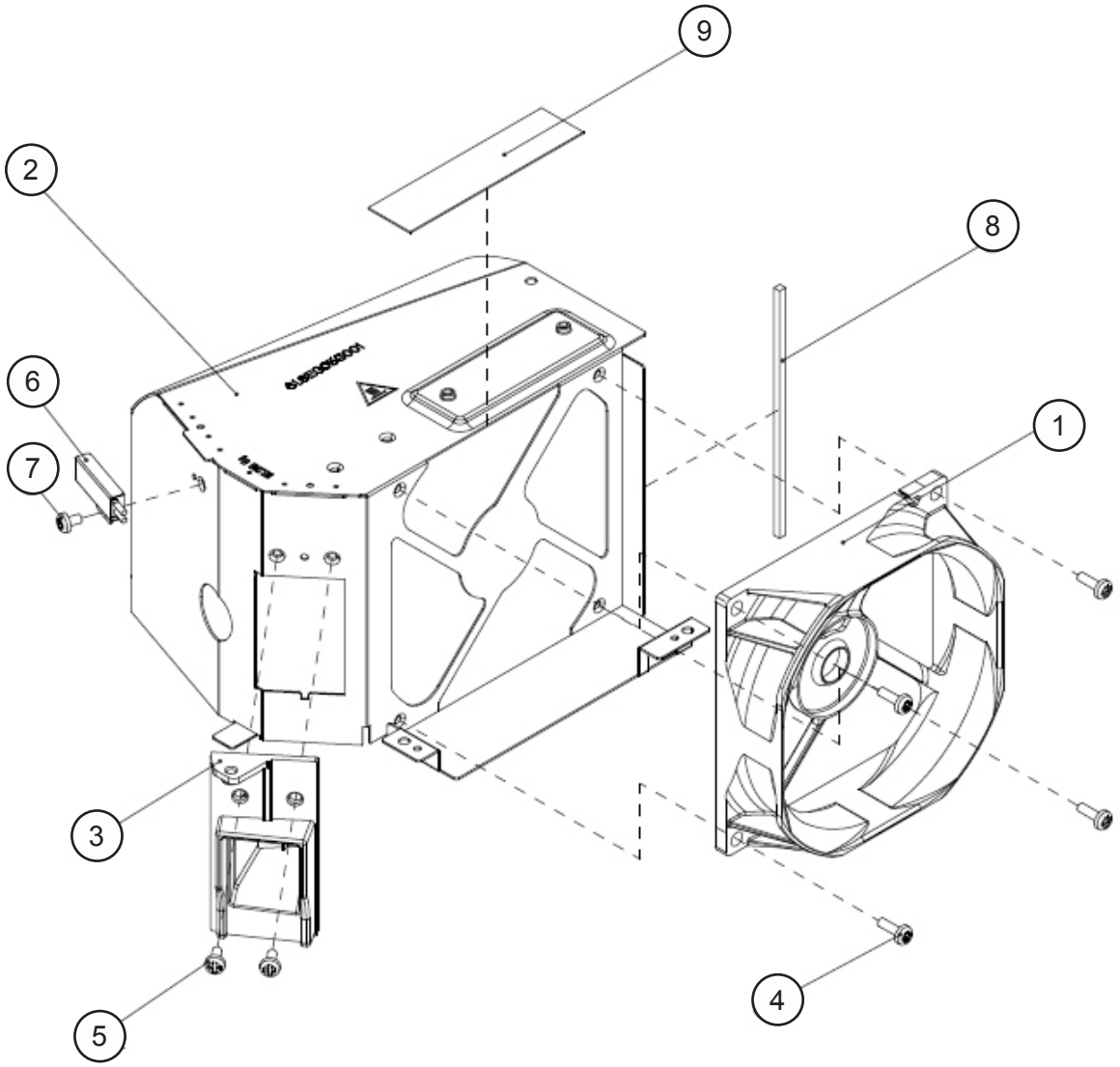
Item	Description	Parts Supply
1	PCBA MAIN BOARD FOR HD25 PROJECTOR	V
2	MAIN BOARD SHIELDING HD25LV	
	ASSY IO COVER MODULE FOR 8RV WHITE(SERVICE)	V
3	IO COVER WHITE HD25LV (LGSM)	
4	SCREW PAN TAP M3*6 Ni	
5	SCREW HEX I/O #4-40 H4*L8 NI NYLOK	
6	SCREW PAN MECH M3*5 Ni	

Assy 4520 Blower Module



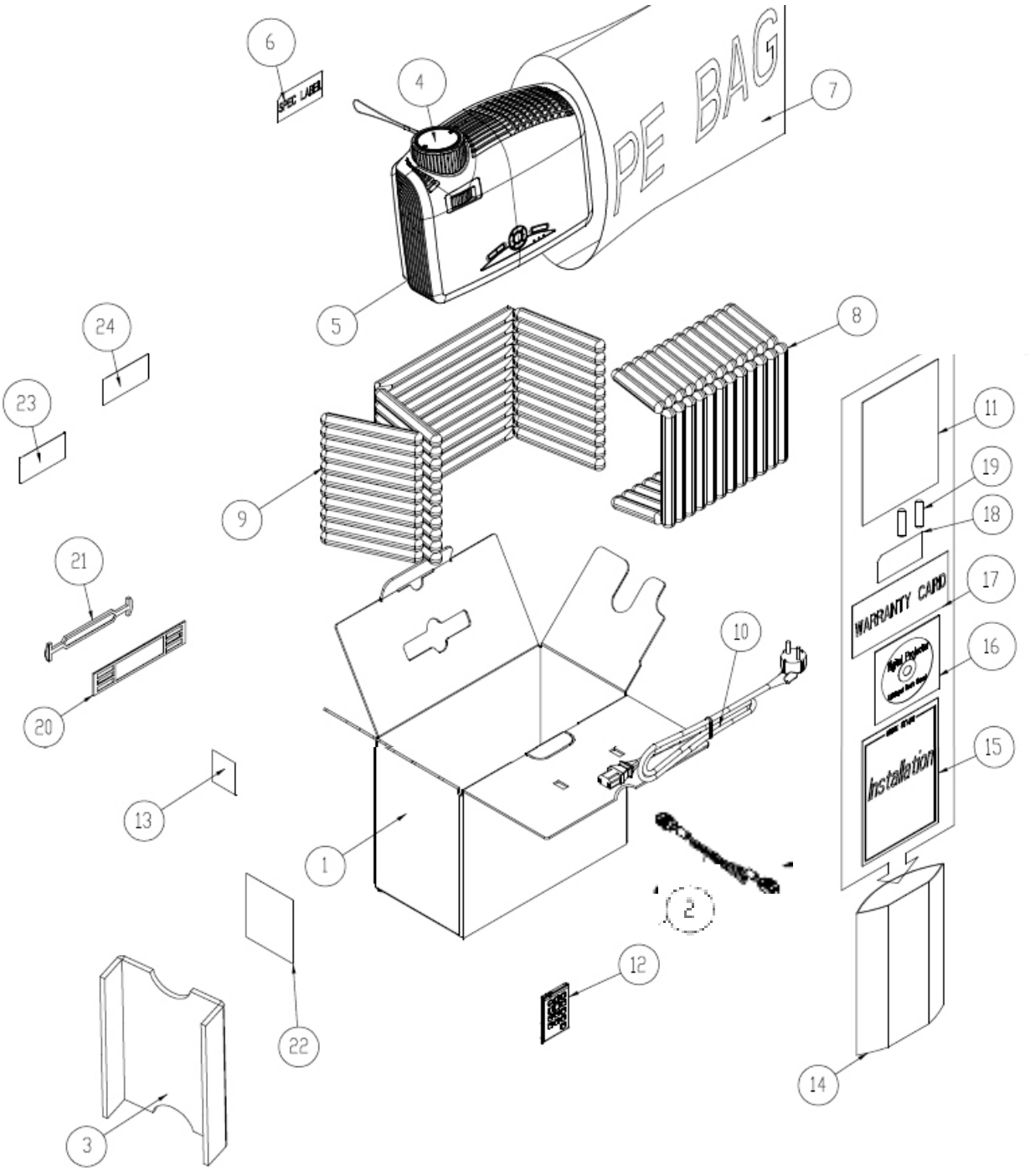
Item	Description	Parts Supply
1	SUNON 45x20 BLOWER, F TYPE , wire length 150mm , heat-shrink length 1	V
2	BLOWER AIR TIGHT F12 H5350	
3	BLOWER 4520 RUBBER EP7190	

Assy 8525 Fan Shoelding Module



Item	Description	Parts Supply
1	SUNON KDE1285PTV1 AXIAL FAN-LOW COST	V
2	8525 FAN SHIELDING HD20	
3	LAMP BLOWER DUCT HD20	
4	PAN SCREW M3*8 FOR YM-64 FRONT CELL & SP	
5	SCREW PAN MECH M3*6 NI	
6	THERMAL SWITCH WITH BRACKET (KLIXON YS11) HD20 100C	V
7	SCREW PAN MECH M3*4 Ni	
8	TAPE 3M J350 17*60mm	
9	EMI GASKET 4*3&51mm S15E	

Assy Packing Drawing



Item	Description	Parts Supply
1	CARTON OUTSIDE BOX AB FLUTE HD25	V
2	CABLE VGA 15P 1.8M BLK EP739	
3	PARTITION PAPER LEFT HD20	
4	LENS CAP ASSEMBLY HD20 BLACK	V
5	D.C. HD20	
6	SPEC LABEL BLANK PD120	
7	PE BAG HD20	
8	AIR BAG BOTTOM HD20	
9	AIR BAG TOP HD20	
	CABLE POWER CORD 1830mm SP30+IS14;BC-PU-PIXY01	V
10	CABLE POWER CORD 1.8M SP30+IS14 US	V
11	INSTRUCTION CARD (OPTOMA)-BEFORE RE-TURN FOR PICO	
	INFRARED REMOTE CONTROL White FOR HD25e	V
12	HD25/HD25LV 1080P INFRARED REMOTE CON-TROL “Non-Laser”	V
13	PACK SIO2 DRIER 20g	
14	PE BAG ZIPPER 33cm*25cm SIZE GREEN FOR OPTOMA	
15	QUICK START CARD MULTILINGUAL HD25	
16	USER’S GUIDE MULTILINGUAL (CD) HD25	V
17	WARRANTY CARD US FOR OPTOMA, 1 YEAR	
18	EXTENDED WARRANTY ; REGISTRATION FORM,USA FOR LPP SERIES	
19	BATTERY #7 1.5V NOVACELL	
20	HANDLE BAR 2. PE HD70	
21	HANDLE BAR 1.PE HD70	
22	AK LABEL 3”*3” BLANK	
23	LABEL 30mm,GREEN	
24	New LABEL CARTON 108*92 BLANK	

Appendix B

I. Serial Number System Definition

Serial Number Format for Projector

Q	8RV	2	22	AAAAA	C	0001
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) : **Q = Optoma**

(2) : **8RV = Project code**

(3) : **2 = Last number of the year (ex:2012 = 2)**

(4) : **22 = week of the year (ex:the twenty-second week of the year = 22)**

(5) : **AAAAA = not-defined**

(6) : **C = Manufacture factory (CPC)**

(7) : **0001 = Serial code**

EX: Q8RV222AAAAAC0001

This label represents the serial number for HD25LV. It is produced at CPC on the twenty- second week of 2012. Its serial code is 0001.

II. PCBA Code Definition

PCBA Code for Projector

A	B	XXXXXXXXXXX	C	XXX	EEEE
①	②	③	④	⑤	⑥

① : ID

② : Vendor Code

③ : P/N

④ : Revision

⑤ : Date Code

⑥ : S/N